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Pathfinder

Operator's Manual

Setting Up and Using Pathfinder's Power Tools

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This device complies with Part 15 of the FCC Rules. Operation is subject to two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Warning! Changes or modifications to this product which are not authorized by Prentke Romich Company could exceed FCC limits and negate your authority to use this product.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. You can determine whether this product is causing interference in your radio or television by turning this product off. If the interference stops, it was probably caused by this product or one of its accessories. You can attempt to correct the interference by using one or more of the following measures:

- Turn the television or radio antenna until the interference stops.
- Move this product to one side or the other of the television or radio.
- Move this product farther away from the television or radio.
- Plug this product into an outlet that is on a different circuit from the television or radio; that is, this product should be controlled by different circuit breakers/fuses from the television or radio.
- If necessary, contact a Prentke Romich Company service technician for assistance.

This Class B digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations. Cet appareil numérique de la classe B respect toutes les exigences du Règlement sur le matériel brouiller du Canada.

Prentke Romich Company•1022 Heyl Rd.•Wooster, Ohio 44691

ACKNOWLEDGEMENTS

Pathfinder Manual: Power Tools

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CE ENVIRONMENTAL INFORMATION: Use: 0° - 45° C; Storage: (-20°) - 50° C; 95% maximum relative humidity @ ambient temperatures less than 40° C.



Attention! Consult accompanying documents.



Type BF Applied Part: F type applied part complying with the specified requirements of 60601-1 to provide protection against electric shock, particularly regarding allowable leakage current.

Not intended to be an emergency call device or sole communication device.

Turning the Pathfinder On for the First Time

To conserve batteries, the entire unit was turned OFF at the factory before it was shipped. To use it, you must turn the unit ON.

To Turn the Pathfinder ON

On the front of the case

Press the I/O and the TOOLBOX buttons down at the same time, then release.

(The Toolbox button has the picture of a hammer and screwdriver on it.)

Recommendation

To Avoid Static Discharge

You can avoid static discharge by turning the Pathfinder OFF before you plug anything into or unplug anything from the connectors on the case—this includes switches, headpointers, and **especially** the battery charger.

When you follow this recommendation you are helping to preserve the device's memory by safeguarding its electronic circuits.

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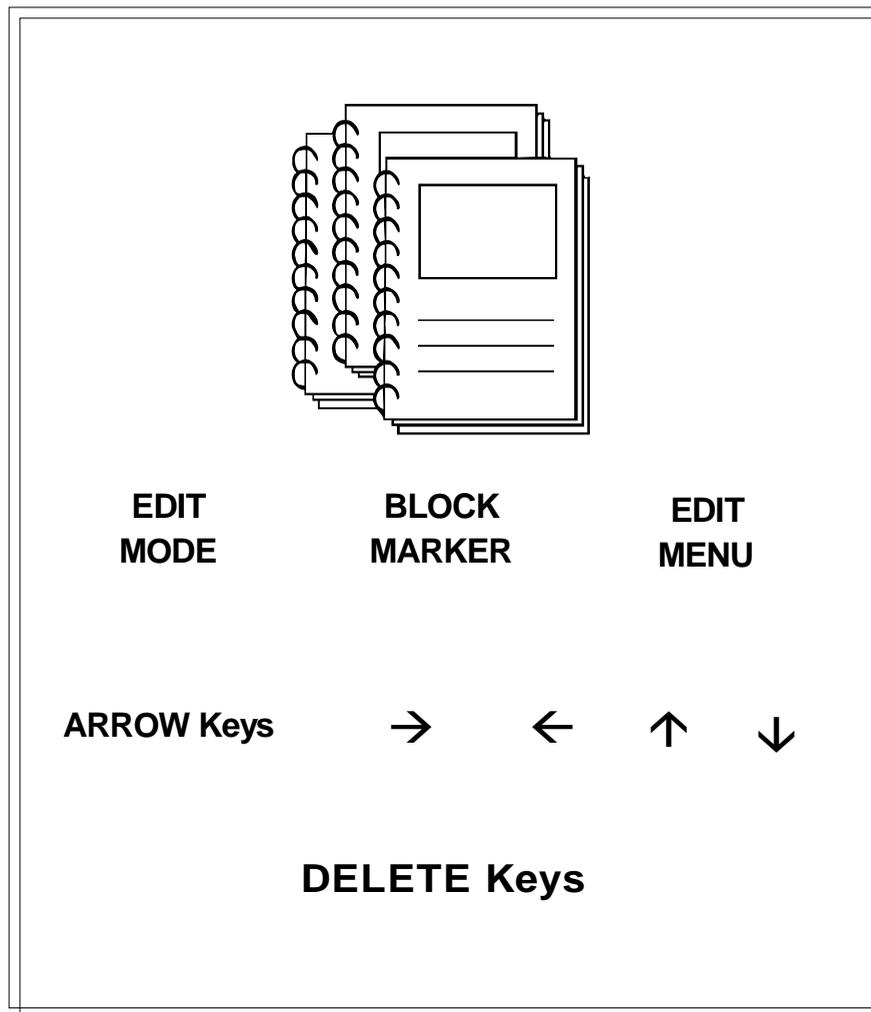
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Editing and Notebooks



Notebooks and some Editing Tools

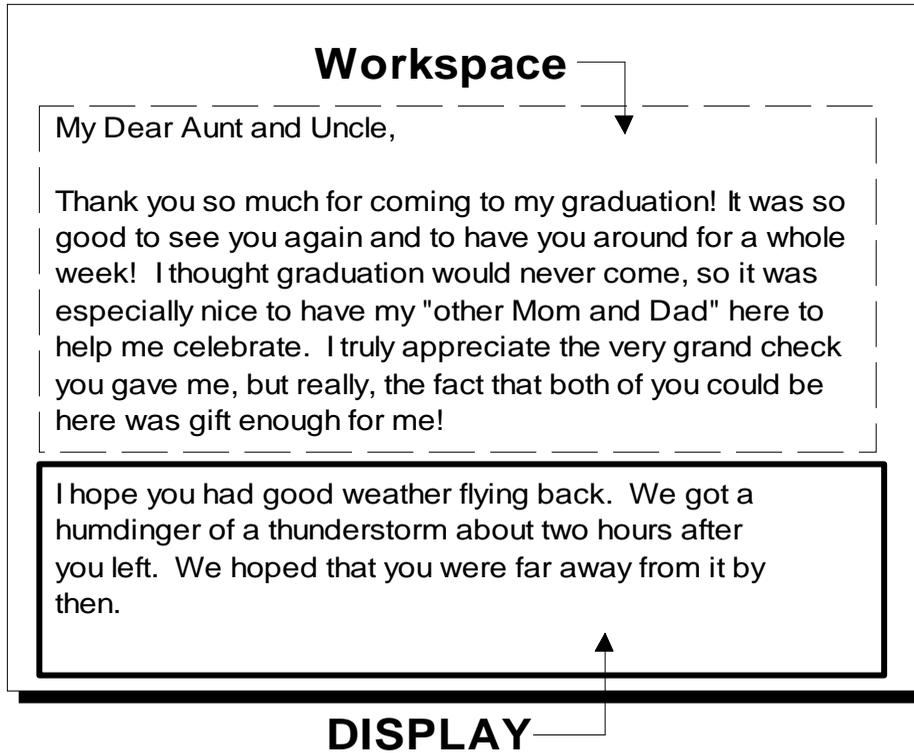
About the Editing Tools and Notebooks

The Pathfinder's primary form of communication is speech. However, the Pathfinder also offers printed text which is an important form of communication. Printed text can be used to communicate with someone who cannot hear the Pathfinder's speech. It can also be used to write letters and speeches, take notes and access a computer.

Because the Pathfinder has the ability to let you use printed text to communicate, it also offers a number of different tools to help you edit the text you create. You can cut and paste text, search for and replace words, delete characters and highlight text.

The Pathfinder also has Notebooks. Notebooks can be used to create and save long portions of text, like speeches, letters, class notes, etc. You can open new, blank Notebooks, or you can use the templates that the Pathfinder has already formatted for you. You can create a calendar or a schedule Notebook from a template. You can also save your own Notebooks to use as templates.

This chapter discusses Notebooks and editing tools.



The Pathfinder Regular Workspace

The Pathfinder's Regular Workspace

Summary:

The Pathfinder Workspace is a 2000 character page of text. The text that you put on the display screen in either Minspeak or Spell, eventually goes into the workspace. Editing tools allow you to go into the Workspace and change text that has scrolled off the display screen.

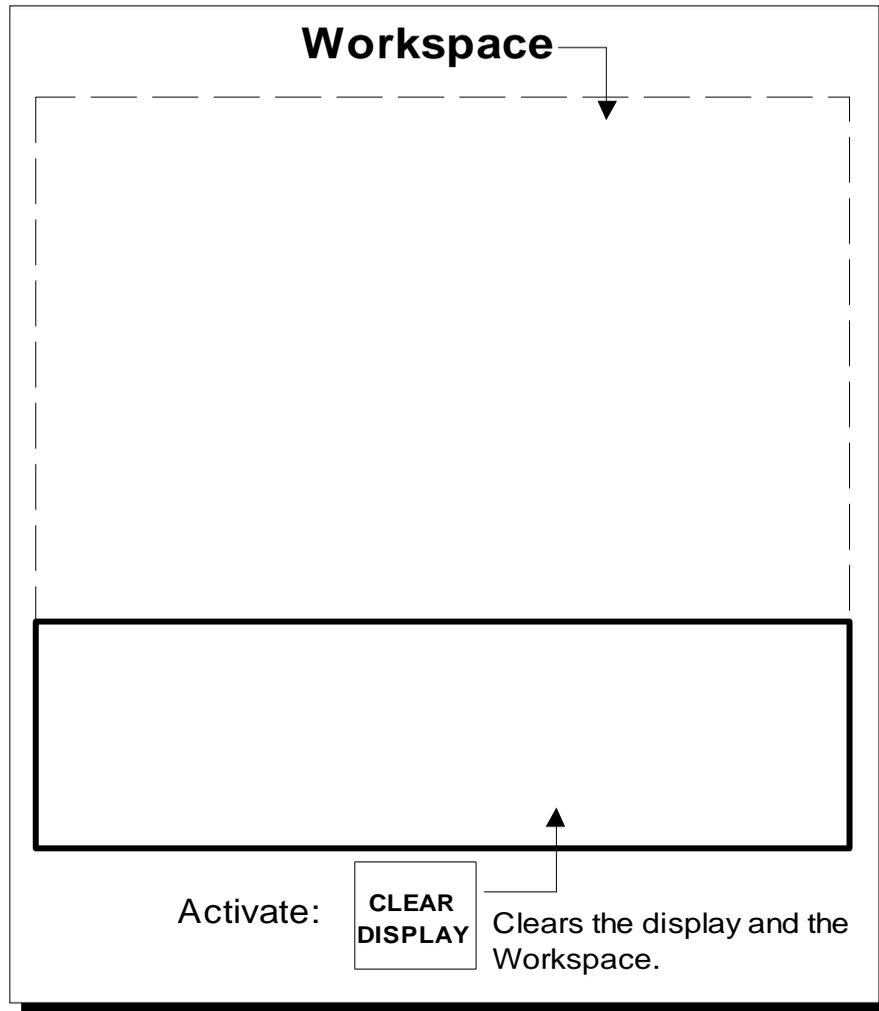
When you fill up the Pathfinder display screen with text, you may notice that the top line of text disappears from the screen so you can see the bottom line of text. This is called "scrolling".

The text that has scrolled off the top of the display goes into the regular **Workspace**. This Workspace saves the last 2000 characters that you put on the display. This means that when text scrolls off the Pathfinder's display screen, it is still kept for awhile in the Workspace. You can use the edit tools to edit text in the Workspace as well as text on the display screen.

When the Workspace finally fills up, the characters scroll out the top of the Workspace to make room for new characters that are scrolling off the display. Once characters have left the workspace, you cannot retrieve them.

The Workspace can hold 8 or 9 times as much text as can be shown on the display screen.

 The Pathfinder also has a Notebook Workspace. The Notebook Workspace is discussed later in this chapter.



Activate CLEAR DISPLAY to Clear the Display
and the Workspace

CLEAR DISPLAY Clears the Text from the Display and the Workspace

If you want to clear all the text off the display screen and from the workspace, activate the CLEAR DISPLAY tool.

It is important to remember that CLEAR DISPLAY will clear the text from both the display and the workspace.  **If you activate CLEAR DISPLAY by mistake, you will loose all your text.**

If you want to clear text from the display only, use the DELETE WORD, DELETE CHARACER or DELETE LAST SELECTION tools. Any text that has scrolled into the workspace will remain in the workspace if you use these tools.

 CLEAR DISPLAY does not work this way with the Notebook Workspace. If a Notebook is open and you activate CLEAR DISPLAY, nothing will happen. You must use one of the DELETE tools to delete text from a Notebook.

Editing Tools

Summary:

Editing tools such as the arrow keys, Block Marker, Edit Mode and EDIT menu allow you to make changes to any text you put on the display.

There are several editing tools in the Toolbox and in the All Tools List. These tools allow you to edit messages. You can use them with stored messages and Notebooks. The edit tools work in Spell mode, Minspeak mode and in the Toolbox.

The Editing Tools:

↓↑→← - These are the Arrow keys. They move the cursor in the direction of the arrow. You can use them to navigate through text or to navigate through things like icon categories and activities.

Home: Moves the cursor to the front of the current line.

Page Up: Moves the cursor to the top of the current page.

Page Down: Moves the cursor to the bottom of the current page.

End: Moves the cursor to the end of the current line.

Edit Mode – This tool determines how far the arrow keys move the cursor. For example, word-by-word, sentence-by-sentence, character-by-character, etc.

Block Marker – This tool allows you to highlight a block of text. Once text is highlighted, use the EDIT menu to move, copy or cut it.

EDIT Menu – This allows you to move, copy or delete highlighted text.

The next few pages explain how the editing tools work.

Arrow Keys and EDIT MODE

The arrow keys move the cursor the way the arrow points.

← moves the cursor one character to the left.

→ moves the cursor one character to the right.

↑ moves the cursor up one line.

↓ moves the cursor down one line.

Use DELETE CHARACTER to delete individual characters to the **left** of the cursor. Use DELETE WORD to delete individual words to the **left** of the cursor. Use DELETE LAST SELECTION to delete the last thing you placed on the display.

If you spell in a new word or retrieve a Minspeak sequence to add to a sentence, the word will appear in **front** of the cursor.

EDIT MODE

← moves the cursor to the beginning of next word to the left.

→ moves the cursor to the beginning of the next word to the right.

↑ Word mode: moves the cursor up one page at a time.

Sentence mode: moves cursor to the beginning of the text

Character mode: moves the cursor up one line at a time.

↓ Word mode: moves cursor down one page at a time.

Sentence mode: moves the cursor to the end of the text.

Character mode: moves the cursor down one line at a time.

When you want to highlight text, move the cursor to the beginning of the text you want to highlight.
Activate **BLOCK MARKER**.
Move the cursor to the end of the text you want to highlight.
The text is highlighted as the cursor moves across it.
Activate **BLOCK MARKER** again to clear the highlighting.

 UNTITLED 9/20/99 1:19P

Move the cursor to the beginning of the text you want to highlight.
Activate **BLOCK MARKER**.
Move the cursor to the end of the text you want to highlight.
The text is highlighted as the cursor moves.

To unhighlight text, activate **BLOCK MARKER** again.

Activate **BLOCK MARKER**
This text is to be highlighted.

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Highlight Text with Block Marker

To highlight text move the cursor to the text that you want to mark, activate **Block Marker**. Move the cursor to the end of the text to be marked. As the cursor moves the text is highlighted.

If you want to delete text, copy text or move text from one place in the workspace or Notebook to another, you must first highlight the text you want to move.

To Highlight Text

1. Use the arrow keys to move the cursor to the beginning of the text that you want to highlight.
2. Activate **Block Marker**.
3. Use the arrow keys to move the cursor to the end of the text that you want to highlight. As you move the cursor, all the characters that the cursor passes over will become highlighted. Move the cursor until all the text that you want marked is highlighted. ➡ You can use EDIT MODE to highlight a word or sentence, if you like, rather than highlighting character by character.
- 3a. To *unhighlight* the text you are marking, activate BLOCK MARKER again.
4. When the text is highlighted, activate EDIT MENU and select an option for your highlighted text.

The next few pages tell you how to cut, copy and paste highlighted text using the **EDIT** menu.

Cut and Paste Highlighted Text

You can cut (delete) highlighted text from the workspace or Notebook and paste it somewhere else. The Pathfinder can hold one item of copied text at a time. You can paste the item any number of times. The item remains in the Pathfinder's clipboard until you cut or copy new text.

To Highlight and Cut Text:

1. Place the cursor at the beginning of the text you want to cut.
2. Activate ***Block Marker***.
3. Move the cursor to the end of the text you want to cut. The text is highlighted as the cursor moves.
4. Activate the EDIT menu.
5. Activate Option #1, ***Cut Text***. The text is cut and Pathfinder exits the menu.

To Paste Cut Text Back Into a Document

1. Use the arrow keys to place the cursor where you want the text to go.
2. Open the EDIT menu.
3. Activate Option #3, ***Paste Text***.
4. The text appears where the cursor was on the display.

 To *unhighlight* text, activate ***Block Marker*** again.

Copy Highlighted Text

You can copy highlighted text from the workspace or Notebook and paste it somewhere else. Copied text is not deleted from its original place in the workspace or Notebook as it is when it is cut. The Pathfinder can hold one item of copied text at a time. You can paste the item any number of times. The item remains in the Pathfinder's clipboard until you cut or copy new text.

To Highlight and Copy Text

1. Place the cursor at the beginning of the text you want to copy.
2. Activate **Block Marker**.
3. Move the cursor to the end of the text you want to copy. The text is highlighted as you move the cursor.
4. Activate **EDIT** menu.
5. Activate Option #2, **Copy Text**. The text is copied and Pathfinder exits the menu.

To Paste Copied Text into the Document

1. Place the cursor where you want the copied text to go.
2. Open the **EDIT** menu.
3. Activate Option #3, **Paste Text**. The Pathfinder pastes the text into the document at the cursor and exits the **EDIT** menu.

 To *unhighlight* text, activate **Block Marker** again.

Using Find and Replace

Let's look at the *Find and Replace* Options: Open the EDIT menu and activate *Find and Replace*.

"Find" Direction

Tell the Pathfinder to search forward or backward in your text. For example, if your cursor is at the end of the text you want to search, tell the Pathfinder to search **backward** through the text.

Match Case

If you want the Pathfinder to look for capital letters in the find or replace word, set this option to *Yes*. If it doesn't matter, select *No*.

Confirm Replace

When this is set to Yes, the Pathfinder will ask you each time it comes to a "find" item if you want to replace it. You must then select Yes or No. If this is set to No, the Pathfinder will not ask.

Find Next

If you select this, you must type in the word you want the Pathfinder to find. Select OK when you have entered the word. The Pathfinder will highlight the word in the text. You can then replace it yourself. Or, if you just want to know where all the occurrences of the word are in the text, return to the EDIT menu and continue to select *Find Next*.

Replace Next

If you select this option, type in the "find" word. Then type in the replacement word. Activate OK. The Pathfinder will automatically replace the word, one selection at a time. You must activate this option for each replacement.

Replace All

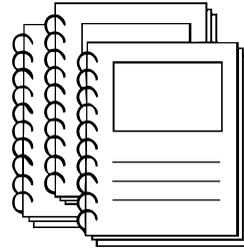
If you select this option, type in the "find" word. Then type in the replacement word. Activate OK. The Pathfinder automatically replaces the word throughout the whole text.

Editing or Erasing the Contents of the Regular Workspace

To retrieve text that has scrolled into the regular workspace, use the arrow keys to move the cursor up the display screen. Text in the Workspace will begin to appear on the display screen. When you see the text that you want to edit, stop moving into the workspace and begin editing.

If you want to erase the entire contents of the regular workspace, select CLEAR DISPLAY.

⦿ When you erase the regular workspace by using CLEAR DISPLAY, you can no longer retrieve any text that was there. It is permanently erased.



Notebooks

NOTEBOOK MENU - No notebook open			1
1	New Blank	4	Save Notebook
2	New Formatted	5	Delete Notebook
3	Open Notebook	6	Close Notebook
		7	More Items
		8	OK
		9	Cancel

NOTEBOOK MENU - No notebook open			2
1	Rename Notebook	4	Notebook Speech Rate 1
2	Print Notebook	5	Load Notebook From Disk
3	Lock Notebook UNLOCKED	6	Save Notebook to Disk
		7	More Items
		8	OK
		9	Cancel

The NOTEBOOK Menu

About Notebooks

Summary:

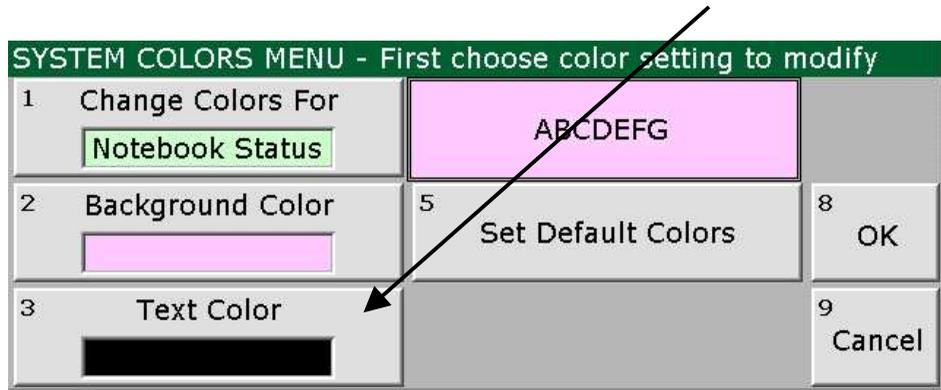
Use Notebooks for large amounts of text, for keeping schedules and calendars, for journals, etc. Notebooks are unique to a User Area and are automatically saved when the Pathfinder is turned Off.

When you have to create large amounts of text, use an individual Notebook. When you want to set up a daily calendar or schedule, use one of the Pathfinder's formatted Notebooks. If you have created a Notebook whose format you think you will use again, save it as a formatted Notebook so you can re-use it.

Many people who have learned to communicate well using a communication aid are often asked to give speeches. Notebooks are ideal for storing speeches. You can store the tool, SPEAK NOTEBOOK, to speak a *specific* Notebook. Or you can store the tool, SPEAK ALL to speak any unspecified Notebook. You can even select a special **Notebook Speech Rate** in the NOTEBOOK menu. This is the rate that the Pathfinder will use whenever it is speaking a Notebook.

Notebooks are unique to a User Area. A person in User Area 1 cannot access Notebooks from User Area 2, for example. Notebooks can also be locked. This means that a person can look at the Notebook but not change anything or create any new text in it.

Among other things, the NOTEBOOK menu allows you to start new Notebooks, open existing Notebooks, save Notebooks and rename Notebooks. The next few pages discuss the options in the NOTEBOOK menu.



Change Notebook Status Bar Colors in the FEEDBACK Menu

Change the Color of the Notebook Status Bar so You Will Know You Are in a Notebook

You will find that it is helpful to make the Notebook status bar a different color from the regular display status bar. When the Notebook status bar is a different color, you can easily tell whether you are using a Notebook or not, especially if you are moving from the regular display to a Notebook, or hiding and showing Notebooks.

To Change the Notebook Status Bar Color:

1. Turn the Toolbox On.
2. Open the FEEDBACK Menu.
3. Activate MORE ITEMS until you see the *System Colors* option. Activate this option.
4. Activate option #1: *Change Colors For* until you see *Notebook Status*.
5. Pick a *Background Color* and a *Text Color* different from the colors you selected for your Workspace colors or Menu colors.
6. When you have finished, Activate OK twice, to exit the menu.

The Notebook Workspace

Summary:

The Notebook workspace is a 30,000 character page of text. The text that you put on the display screen in either Minspeak or Spell eventually goes into the workspace. Editing tools allow you to go into the workspace and change text that has scrolled off the display screen. The Notebook workspace is separate from the regular Pathfinder display workspace.

The Notebook workspace is like the Pathfinder regular workspace except that it is only available when you are working in an open Notebook. (See pages 13-15 for more information about the regular Workspace.)

When you are working in a Notebook and you fill the display screen with text, notice that the top line of text disappears from the screen so you can see the bottom line of text. This is called "scrolling".

The text that has scrolled off the top of the display goes into the **Notebook workspace**. You can use the edit tools to edit text in the workspace as well as text on the display screen. (See pages 13-15, 28-29.)

When the workspace finally fills up, the characters scroll out the top of the workspace to make room for new characters that are scrolling off the display. Unlike the regular workspace, the Notebook workspace will keep all of the Notebook text. When a Notebook is full it won't allow you to add anymore text and nothing will scroll off the display into the workspace.

➡ Notebooks can take up a lot of Pathfinder memory. If you find you are running out of memory, look at your Notebooks and see if there are any you can delete.

Editing or Erasing the Contents of the Notebook Workspace

You can edit or erase the Notebook workspace by editing or erasing a Notebook's contents.

To Edit a Notebook:

Open the Notebook. Use EDIT MODE or EDIT MENU and the arrow keys to edit text in the Notebook.

If you want to delete the entire contents of a Notebook:

Open the NOTEBOOK MENU in the Toolbox and select *Delete Notebook*. Select the Notebook you want to delete. This will delete the entire Notebook as well as the name of the Notebook.

OR

Highlight all the text in an open Notebook.

Open the EDIT MENU in the Toolbox.

Activate Cut.

This deletes all the text in the Notebook, but retains the name of the Notebook. In effect, you have a blank named Notebook.

OR

Highlight all the text in the Notebook

Activate the DELETE CHARACTER key on your overlay.

This also deletes all the text in the Notebook, but retains the name of the Notebook. In effect, you have a blank named Notebook.

⌚ When you delete the contents of a Notebook, you can no longer retrieve any text that was there. It is permanently erased.

NOTEBOOK MENU - No notebook open			1
1	New Blank	4 Save Notebook	7 More Items
2	New Formatted	5 Delete Notebook	8 OK
3	Open Notebook	6 Close Notebook	9 Cancel

NOTEBOOK MENU - No notebook open			2
1	Rename Notebook	4 Notebook Speech Rate 1	7 More Items
2	Print Notebook	5 Load Notebook From Disk	8 OK
3	Lock Notebook UNLOCKED	6 Save Notebook to Disk	9 Cancel

The NOTEBOOK Menu

New Blank Notebooks

A new blank Notebook is a Notebook that has never been used before. A blank Notebook is not formatted and it does not have a title.

To Open a Blank Notebook:

1. Remove the keyguard and overlay. Press the TOOLS button to open the Toolbox.
2. Activate the NOTEBOOK menu in the Toolbox.
3. Activate option #1: *New Blank*.

Notice that the status bar at the bottom of the Pathfinder display screen has the picture of a small Notebook in it and the word UNTITLED next to it. Whenever you are using a Notebook, the status bar will show the little Notebook icon and will display the name of your Notebook. If you have not saved and named the Notebook yet, the status bar will show the word UNTITLED.

You can *Save* a Notebook anytime it is open. Just open the NOTEBOOK menu and activate the *Save* option. If the Notebook has not been named yet, you must name it. When the Notebook is saved, the Pathfinder returns you to the open Notebook.

Close a Notebook; Save a Notebook

When you have finished using a Notebook, you can close it by activating the Close Notebook option in the NOTEBOOK menu. When you close a Notebook, the Pathfinder returns you to the regular display area. The Notebook icon disappears.

If this is the first time you have closed your Notebook, the Pathfinder will ask you to name the Notebook. Enter a name and activate OK. The Pathfinder automatically saves and then closes the Notebook.

If you want to close an Untitled Notebook without naming and saving it:

1. Open the NOTEBOOK menu in the Toolbox.
2. Activate Option #6: *Close Notebook*.
3. If there is no writing in the Notebook, the Pathfinder will simply close the Notebook and return you to the regular workspace.
4. If you have written in the Notebook, the Pathfinder asks you if you want to save the changes in the Notebook. Activate NO. The Pathfinder returns you to the regular display.

To Save a Notebook

When you are using a Notebook, you will want to save your work regularly. The *Save Notebook* option tells the Pathfinder to save your work.

1. Activate Save Notebook
2. If the Notebook you want to save has not been named yet, the Pathfinder will ask you to name it before it saves the Notebook.
3. The Pathfinder saves the Notebook and returns you to it. It does not close the Notebook.

 **Helpful Hint:** If you only want to close a Notebook for a moment so you can speak, you can use the Hide/Show Notebook key in the Toolbox to hide the Notebook. See page 41 for more information.

Using a Formatted Notebook

The Pathfinder offers you 8 different kinds of formatted Notebooks. Formatted means that these Notebooks are already set up for something specific. All you have to do is add your personal touch to them.

For example, if you would like to keep a daily schedule, you could use the "Schedule" Notebook. This Notebook has a list of the hours in the day at half-hour intervals. All you have to do is to enter your appointments at the correct time slot. Or, you might like to keep a calendar handy. The Pathfinder lets you set up a calendar Notebook. You can choose either a yearly calendar or a monthly calendar and you can set it up the way you want.

Formatted Notebooks save you the trouble of creating the same thing over and over.

Let's say you opened a new blank Notebook, made an outline of a speech you were asked to give and saved the Notebook. Some time later you are asked to give another speech and you wish you could use the same outline, only this time you would substitute points from your new speech into the outline. The Pathfinder lets you do this with the *Existing Notebooks* option.

The *Existing Notebooks* option in the NOTEBOOK menu gives you a list of all the Notebooks you have saved. You can select the one that has the format you want to re-use, open it, save it under a new title and then add or delete information as you wish. In the speech outline example, above, you could keep the outline format, use the editing tools to erase the old points and then type in the points for your new speech.

Open a Notebook from a List of Notebooks

Every time you name and save a Notebook, the Pathfinder keeps a record of it. If you want to open a particular Notebook, use the Open Notebook option in the NOTEBOOK menu.

To Open a Named Notebook:

1. Remove the keyguard and overlay. Press the TOOLS button to open the Toolbox.
2. Open the NOTEBOOK menu.
3. Activate Option #3: *Open Notebook*.
4. You see a list of all your Notebooks. Activate the option for the one you want to use.

 See page 42 for instructions about how to open a Notebook using an icon sequence.

Delete a Notebook

If you find that you no longer need a Notebook, you should delete it. This will free up Pathfinder memory. Deleting Notebooks that you no longer use also helps to keep your Notebook list manageable.

To Delete a Notebook:

1. Remove the keyguard and overlay. Press the TOOLS key to open the Toolbox.
2. Activate the NOTEBOOK menu.
3. Activate Option # 5: *Delete Notebook*.
4. The Pathfinder shows you a list of all your Notebooks. Select the one you want to delete. Activate OK.
5. If you want to continue, activate YES. If you decide you don't want to delete the Notebook, activate NO.
6. The Notebook is automatically deleted.

Rename a Notebook

To Rename a Notebook

You may decide to rename a Notebook for some reason. The Rename Notebook option allows you to do this.

1. Remove the keyguard and overlay. Press the TOOLS key to open the Toolbox.
2. Activate the NOTEBOOK menu.
3. Activate *More Items*.
4. Activate *Rename Notebook*.
5. Type in the new name and activate OK

Print a Notebook

You can print out an entire Notebook.

To print a Notebook, the Notebook must be open. If it is not, go to the NOTEBOOK menu and open the Notebook you want to print, then follow the directions below.

1. Connect your printer to the Pathfinder Serial Port on the top of the case. Use the cable that came with your printer.
2. The printer and Pathfinder baud rates must match. If necessary, you can use the Pathfinder's OUTPUT menu to change the Pathfinder baud rate to match the printer's baud rate.
3. The printer must be set up for: Data Bits = 8; Stop Bits = 2; Parity = None.
Check the printer manual to find out how to set these up if they are not already set this way.
4. In the OUTPUT menu, we suggest that you select DELAYED. Text will not go to the printer until you tell it to by selecting the RETURN key or CLEAR DISPLAY on the Pathfinder.
5. Go to the NOTEBOOK menu and activate *Print Notebook*. (Make sure the Notebook you want to print is *Open*.)

Lock Notebook

You can lock a Notebook so that other people can look at it but not write in it or change anything that is already written there.

When you lock a Notebook, a small padlock icon appears in the Notebook status bar next to the Notebook icon. When a Notebook is unlocked, the padlock icon disappears. When a Notebook is locked the display screen background color also changes from the color you selected to a different color to signify that the Notebook is locked.

🔒 You cannot delete or rename a locked Notebook. You must unlock it first.

To Lock a Notebook

🔒 If the Notebook you want to lock is not currently open, use **Open Notebook** and open the Notebook you want. Then re-enter the NOTEBOOK menu

1. Remove the keyguard and overlay. Press the TOOLS key to open the Toolbox.
2. Activate the NOTEBOOK menu.
3. Activate *More Items*.
4. Activate *Lock Notebook*.
5. Activate OK.

Notice the Notebook's status bar at the bottom of the screen. The small padlock should be visible next to the Notebook icon. The display screen background color will also be different.

Transfer Notebooks to a Computer

You can save your Pathfinder Notebooks onto a computer disk or transfer text files from your computer to a Pathfinder Notebook using the Memory Transfer Interface (MTI). You can open the Notebook on your computer and use a word processing application to add to/edit text in your Notebook, if you wish. When you reload the Notebook into your Pathfinder, the Notebook will contain whatever changes you made to it on the computer.

Instructions for transferring Notebooks to and from a computer are in the *MTI Manual* that came with your Pathfinder.

Speaking a Notebook and Using the Notebook Speech Rate

There may be times when you will want to speak your Notebooks, perhaps to give a speech or to make a presentation. There are two insertable tools you can store that allow you to speak your Notebooks.

Use the SPEAK NOTEBOOK tool when you want to speak a specific Notebook. When you insert and store this tool, you must also store the name of the Notebook you want to speak. Use the SPEAK ALL tool to speak any open Notebook

The Notebook Speech Rate Option

We have found that the regular speech rate is often too fast for people who are listening to long pieces of spoken text. The *Notebook Speech Rate* option allows you to select a speech rate that is different from your normal conversational speech rate. A slower speech rate helps people to follow along better.

When you select a Notebook speech rate, the Pathfinder will use that speech rate with any Notebook you want to speak. We suggest you select some different speech rates and then have someone listen to each rate for a few minutes so you can decide which rate will be best for your listeners.

To Select a Notebook Speech Rate:

1. Open the NOTEBOOK Menu.
2. Activate MORE ITEMS.
3. Activate option #4: *Notebook Speech Rate*.
4. Practice with some different rates before you select a final one.

The HIDE/SHOW NOTEBOOK Tool

There may be times when you are working in a Notebook and you want to go to the regular display to work for a few minutes. You don't want to close your Notebook because you know you will be coming back to it shortly. Instead of closing your Notebook, you can hide it by activating the HIDE/SHOW NOTEBOOK tool in the Toolbox. The HIDE/SHOW NOTEBOOK tool is in the Toolbox. You can assign it to a key on your overlay or store it under an icon sequence if you want it to be available from your overlay.

When you activate HIDE/SHOW NOTEBOOK, the Notebook disappears and the Pathfinder display is visible.

Notice that in the status bar at the bottom of the display, the little Notebook icon is gone.

When you have finished with the regular display workspace, activate the HIDE/SHOW NOTEBOOK tool again.

Your Notebook appears and you can continue to work in it. Notice in the status bar that the little Notebook is visible. You will also see the title of the Notebook or the word UNTITLED if you have not yet named the Notebook.

 This tool has been called the **Open/Close Notebook** tool on previous devices.

Store a Notebook Under an Icon Sequence

Summary:

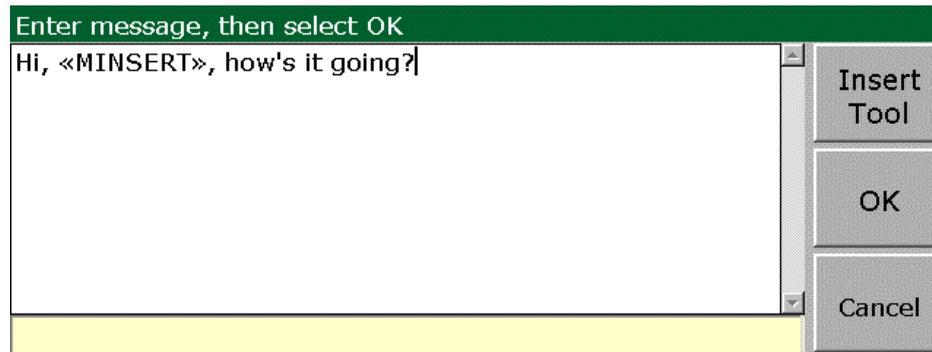
Activate STORE. Activate the icon sequence you want to use. Activate *Synthesized*. Activate *Spell Text for Message*. Activate INSERT TOOL. Activate OPEN NOTEBOOK. Select the Notebook to store. Exit the menu.

You may have a Notebook (or two or three) that you use frequently. You would like to have them on your communication overlay so that you can access them quickly. Follow the direction below to store a Notebook under an icon sequence on your overlay.

1. Remove the keyguard and overlay. Press TOOLS to open the Toolbox.
2. Activate STORE CORE in the Toolbox.
3. Activate the icon sequence you want to use. Activate OK.
4. Activate *Synthesized*.
5. Activate *Spell Text for Message*. Activate OK.
6. Activate INSERT TOOL on the screen.
7. Step through the tools until you come to OPEN NOTEBOOK and then activate that option.
8. Select the Notebook you want from the list. Activate OK.
9. Activate OK again.

 You may want to store the NOTEBOOK menu under an icon sequence to make navigating between communication and writing easier. Follow the steps above to store the NOTEBOOK menu. After you activate INSERT TOOL, find and activate NOTEBOOK MENU, then activate the number “3” (this opens a Notebook). The display will show: INSERT TOOL<NOTEBOOK MENU>3.

Minserts



Add Minserts to Messages when you are in
STORE mode

Minserts Can Make Messages Much More Flexible

Summary:

Minserts allow you to put "blanks" into a message that you will fill in when you speak the message. This allows you to have many variations of a particular message with minimum storing.

Minserts are blanks that are put into messages while the message is being stored. Later, when you recall the message, the Pathfinder allows you to fill in the blanks. This means you can have one message that can be used in a lot of different situations.

For example, think about the message, "Good morning, how are you?" Although this message is functional, consider the personal touch in saying, "Good morning, John, how are you?" or "Good morning, Aunt Sylvia, how are you?" While it isn't possible to store a personal greeting to all the people you could possibly meet, using a Minsert in this message allows you to insert a name into a generic greeting.

Minserts also allow you to store fewer messages while having access to many more. You could store this message, "I would like to _____ tonight." Any time you recall this message you can fill in the blank with something different, e.g., "go shopping," "eat at Joe's," "stay home," "watch a video".

You can use any number of Minserts in a stored message, but each blank must be able to be filled by activating only one sequence or one word.

Add Minserts to a Message when you Store the Message

Summary:

Use Minserts when you are storing a message. When you get to a place where you want to have a "blank", activate INSERT TOOL and then MINSERT. Continue the storing process.

When you use Minserts, you need to be able to fill in the blank by activating only one sequence or one word when you retrieve the message.

Create a Message with a Minsert in it:

1. Remove the keyguard and overlay and turn the Toolbox On.
2. Activate STORE CORE.
3. Select *Synthesized*.
4. Select *Spell Text for Message*.

➡ For example, let's say you want to store, "Hi, _____, how's it going?"

5. Spell, Hi,
6. Activate INSERT TOOL.
7. Activate MORE ITEMS until you see MINSERT.
8. Activate MINSERT.
9. Add a comma or any punctuation you want that will go with the word you will insert later.
10. Continue to spell the rest of the message.

➡ If you want to add more Minserts, do so.

11. Activate OK when you are finished.

Fill in the Minserts when you Retrieve Your Message

You can fill in the Minsert blanks when you retrieve your message. You may use one sequence activation or spell a word or phrase for each Minsert.

Fill in the Minsert by Activating a Sequence:

1. Activate the sequence you stored the message under.
2. Activate the sequence that contains the word you want to replace the Minsert with.

➡ If there is more than one Minsert, the Pathfinder will jump to the next Minsert to be filled.

Fill in a Minsert by Spelling a Word:

With *Auto Spell On*:

Begin to spell the word you want to replace the Minsert. The Pathfinder automatically puts you in Spell mode where you can finish spelling the word. Activate SPELL/MINSPEAK to return to your overlay.

➡ If *Spell One Word* is also on:

When you finish spelling your word activate a space and the Pathfinder will automatically return you to your overlay.

With *Auto Spell Off*:

Select *Spell Minspeak* to toggle back and forth.

You can "stuff" a Minsert

Stuff a Minsert with more than One Icon

When the same icons are always used with a Minsert, you can store them with the message.

For example, the "Hi, <Minsert>, how's it going?" message is one where you are always going to be filling in the Minsert with a person's name. You can store this message so that the Minsert will include the NAME icon. When you recall this message, you will only have to activate the icon(s) that contains the name you want to use.

To stuff a Minsert using the above example:

1. Activate STORE CORE.
2. Activate the sequence you want to use to retrieve the message.
3. Activate OK.
4. Spell, " Hi," add a space and activate *Insert Tool*.
5. Activate "i" and select *Icon*.
6. On your overlay select the NAME icon (the icon with the name of John Hancock and a pen on it).
7. Activate *Insert Tool*.
8. Activate "m" and select *Minsert*.
9. Type "how's it going?" and two spaces.
10. Activate OK twice.

Go to Minspeak and activate the sequence you stored this message under. Notice on your keyboard that only those icons that contain names are highlighted. Select the name you want to use.

Calculator

CALCULATOR						
7	8	9	0	<input type="text"/>		
4	5	6	/	+	.	=
1	2	3	*	-	More Items	OK

Screen 1

CALCULATOR						
1/x	%	log	cos	<input type="text"/>		
sqrt	e^x	n!	tan		.	=
x^y	ln	sin	pi		More Items	OK

Screen 2

The Pathfinder Calculator

The Pathfinder Calculator

The Pathfinder has a built in calculator. To see the calculator, go to the Toolbox and activate the CALCULATOR key. The calculator is always available in the Toolbox. In order to use the calculator in your user area, you must add the CALCULATOR tool to your overlay.

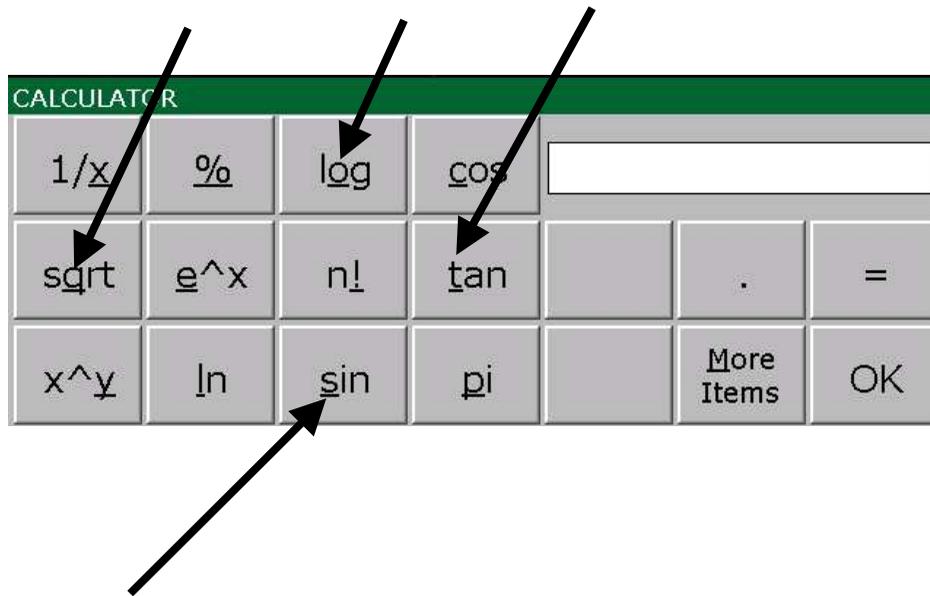
The first screen is for addition, subtraction, multiplication and division. Activate MORE ITEMS to go to the second screen. This screen contains keys for more advanced mathematical problems.

If you can directly access the display screen, you can perform all the calculator functions by using these two screens.

If you cannot directly access the display screen to select keys, you can perform all the functions by using your keyboard. Make sure that **SPELL** mode in your area contains all the numbers and operational signs that the calculator needs. You need to have the numbers 0-9, the +, -, /, *, = signs, the alphabet, and the OK and CLEAR DISPLAY keys assigned to keys on your overlay. If you are using a pre-defined overlay, it will already have all of these keys on it.

If you do not want the calculator to speak, simply turn the SPEECH OFF.

➡ See the *Personalize Your Overlay* chapter in the **Basic Tools** manual for information on adding Tools and assigning characters to your overlay.



Underlined Letters for use on your Keyboard

Using the Calculator

An Addition Problem:

Open the calculator in the Toolbox.

On Screen 1: **Activate 1+1=2.** Did you notice that each time you activate a new key, the screen clears and the latest number is added to the screen? When you activate the = key, the answer to the problem is visible in the display area of the calculator.

If you make a mistake, or want to move to a new problem, activate the **CLEAR DISPLAY** key on your overlay or in the Toolbox. This clears the current problem and lets you start over.

A Square Root Problem

Activate **CLEAR DISPLAY** on your overlay.

Activate **4**.

Activate **More Items** to go to Screen 2.

Activate **sqrt**.

The number 2 appears in the answer box.

If You Can't Access the Display Screen:

Notice on Screen 1 that the "M" in **More Items** is underlined and, on Screen 2, one letter in each function is underlined. If you cannot easily access the display screen, you can activate the keys on your overlay that contain the underlined letters to perform the designated calculator function. For example, to find the square root of 4, you can activate the key that has the "4" on it, then the key that has the "Q" on it. The answer will appear on your display in the answer box.

The OK Key:

The OK key does three things. It exits you from the calculator and returns you to the workspace or an open Notebook. It also copies the answer to your last problem and puts it into the Pathfinder clipboard. (See next page.)

Copy an Answer to a Notebook or the Workspace

If you want to copy the answer to a problem into a Notebook or the display workspace, activate the OK key when you have finished your problem. Go to the Notebook or workspace where you want the answer to be pasted. Open the EDIT MENU and activate the *Paste* option. The answer will appear where your cursor was on the screen.

If you do not want to paste the answer anywhere, just activate OK and exit the calculator. The answer will remain on the clipboard until you copy something else or turn off the Pathfinder.

More Tools for Communication

SPEECH MENU - Select Voice Type, then modify settings as needed			1		
1	Voice Type Main Voice	4	Average Pitch 5	7	More Items
2	Voice URSULA	5	Pitch Range 2	8	OK
3	Speech Rate 2	6	Test Speech	9	Cancel

SPEECH MENU - Select Voice Type, then modify settings as needed			2		
1	Speech Dictionary			7	More Items
				8	OK
				9	Cancel

The SPEECH Menu

Select a Voice from the SPEECH Menu

The SPEECH menu is available for synthesized speech. From it you can choose the voice you want the Pathfinder to use for speaking messages. Reading menus and for speaking auditory prompts. Other options allow you to refine the voice. The Pathfinder uses DECtalk Access32 speech software for English speaking countries. You can also add words to and delete words from the Speech Dictionary in this menu.

Select a Speech Voice:

1. Remove the keyguard and overlay. Open the Toolbox by pressing the TOOLS button on the front of the Pathfinder case.
2. Activate the SPEECH menu in the Toolbox.
3. In the *Voice Type* option, step through the menu until you see the voice you want to modify: *Main Voice*, or *Auditory Prompt Voice*.
4. In the *Voice* option, step through the voices until you see the voice you want to use.

Repeat this process for each choice in Option 1.

5. When you have finished, activate OK.

↻ Use the *Test Speech* option to listen to the voice.

Speech Rate, Average Pitch and Pitch Rate are explained in the following pages.

↻ **The Hidden Speech Menu:** This menu allows you to raise the Tone value of the voice to 10. The voice sounds then sounds more like the Liberator voice, but differences in technology mean that the Lib and Pathfinder voices will never sound exactly alike. **To enter the hidden Speech Menu:** activate <CTRL><SPEECH MENU>. In software earlier than 1.05, you must activate <shift><CTRL><SPEECH MENU>.

Selecting a Speech Rate

Summary:

Speech rate is how fast, or how slowly, words are spoken.

Sometimes synthesized speech is difficult at first for listeners to understand. Slowing down the speech rate so that words are spoken more slowly often helps listeners become used to your voice. On the other hand, you may find that people who listen to you talk all the time understand you easily and want you to speak faster. Raising the rate may be helpful here.

The speech rate is from 0-9. 0 is very slow and 9 is very fast. You will probably not want to use either of these extremes.

To Change the Speech Rate:

1. Remove the keyguard and overlay. Press the TOOLS button on the front of the Pathfinder to open the Toolbox.
2. Activate the SPEECH menu in the Toolbox.
3. Activate the *Speech Rate* option until you see the rate you want.
☞ Use the *Test Speech* option to listen to your changes.
4. Either activate **OK** when you are finished or continue to look at the various speech options. Activate *Cancel* if you want to exit the menu without saving any changes.

🕒 Helpful Hint

When you are giving a speech or talking on the telephone, people will understand your speech better if you set the speech rate to one of the *lower* numbers. ☞ **For Telephones:** Ask someone to listen to you on the phone while you try out some of the lower speech rates to see which one is easiest to understand. ☞ **For Notebooks:** You can set a speech rate for Notebooks in the NOTEBOOK menu. Once you set a rate in the NOTEBOOK menu, all Notebooks will be spoken at that rate.

Selecting an Average Pitch

Summary:

Pitch is how high or low a voice sounds.

The pitch of a voice refers to whether a voice sounds high or low to someone who is listening to it. If you change the pitch of the voice you have chosen, you can make it sound higher over-all or lower over-all. Each optional voice defaults to a different average pitch level. The range is 0-9. The nearer to 9, the higher the voice will sound. The nearer to 0, the lower the voice will sound.

To Change the Average Pitch:

1. Remove the keyguard and overlay. Open the Toolbox by pressing the TOOLS key on the front of the Pathfinder case.
 2. Activate the SPEECH menu in the Toolbox.
 3. Activate the *Average Pitch* option until you see the number you want.
- ➡ You can use the *Test Speech* option to listen to your changes.
4. If you are finished, activate OK. Activate *Cancel* to exit without saving any changes.

Selecting a Pitch Range

Summary:

Pitch range is the amount of variation (or inflection) there is in the pitch of a voice during speech. A pitch range of 0 produces a monotone. A pitch of 9 produces wildly inflected speech.

Average Pitch is what we are referring to when we say that someone has a high voice or a low voice. **Pitch Range** is the variation of tones we hear when words are being spoken. This variation is called inflection. When someone speaks in a monotone, every word in a sentence sounds the same and it is boring to listen to. On the other hand, if someone is really excited, or very afraid, they may pitch the words in a sentence so wildly that they can barely be understood. A good pitch range is one where words can be easily understood but are also interesting to listen to.

The Pitch Range is from 0 –9. 0 is a monotone and 9 is extremely inflected. The default Pitch Range is different for each voice option.

To Change the Pitch Range:

1. Remove the keyguard and overlay. Open the Toolbox by pressing the TOOLS key on the front of the Pathfinder case.
2. Activate the SPEECH menu in the Toolbox.
3. Activate the **Pitch Range** option until you see the number you want.
☞ You can use the **Test Speech** option to listen to your changes.
4. If you are finished, activate OK. Activate **Cancel** to exit without saving any changes.

The Speech Dictionary

Summary:

Add words to the Speech Dictionary to teach the Pathfinder how to pronounce them correctly. Erase words you no longer use. Review the words that are in your Dictionary.

The Pathfinder's DECTalk Access32 speech correctly pronounces most words that you use, but it has trouble with proper nouns like the names of cities and people's names. When you add a word to the dictionary you are teaching the Pathfinder to pronounce it correctly.

You can review all the words that you have put in the dictionary. This can help you decide if you have words that you no longer need in the dictionary.

If you find words that you no longer need, you can erase them from the dictionary.

The next few pages explain all the dictionary options.

Note:

We have already included a number of words in the Dictionary. You might want to review these words before you begin to add any. This will save you both time and the bother of duplicating words.

SPEECH MENU - First choose voice to modify				
1	Voice to modify Main Voice	4	Average Pitch 2	
2	Voice PAUL	5	Pitch Range 4	8
3	Speech Rate 2	6	Speech Dictionary	9
				OK
				Cancel

SPEECH Menu Options

SPEECH DICTIONARY MENU				
1	Add A Word	4	Review to Display	
2	Delete A Word	5	Review to Display & Speaker	8
3	Review Method STEP	6	Review to Output	9
				OK
				Cancel

Speech Dictionary Options

Add Words to the Dictionary

Summary:

Add words to the Speech Dictionary to teach the Pathfinder how to pronounce them correctly.

When you add words to the Dictionary, first you spell them correctly. Then you spell them the way you want the Pathfinder to pronounce them. For example, the name "Romich" (in Prentke Romich) is usually mispronounced in the English speaking Pathfinder, so it is a good name to practice with.

To Add a Word to the Dictionary:

1. Remove the keyguard and overlay. Open the Toolbox.
2. Open the SPEECH Menu
3. Activate the *Speech Dictionary* option.
4. Activate *Add a Word*.
5. Spell the word you want to add. Spell it correctly. In this case you would spell, "Romich".
6. When you have finished spelling the word correctly, activate OK.
7. Now spell the word the way you want it to be pronounced. This means typing the word the way it sounds. You may want to try out different spellings until the Pathfinder pronounces the word the way you want. Activate the text display area of the screen to hear the word pronounced. You will probably end up with a word that looks something like, "Roemick."
8. When you are satisfied with the pronunciation, activate OK.
9. You can continue to add words, delete words or review words. If you are finished with the dictionary, activate OK.

Note:

Some words can be pronounced two ways. For example, "record" can be pronounced reCORD and REcord. Words with alternate pronunciations **should not** be added to the Dictionary unless you *always* want them pronounced in *one way only*. See "Words with Alternate Pronunciations" in Appendix F for more information.

Delete Words from the Speech Dictionary

Summary:

Delete words from the Speech Dictionary that you no longer need.

To Delete a Word from the Speech Dictionary:

1. Remove the keyguard and overlay. Turn the Toolbox on, then activate the *SPEECH* menu in the Toolbox.
2. Activate the *SPEECH DICTIONARY* option.
3. Activate the *Delete a Word* option.
4. Correctly spell the word you want to delete.
5. Activate OK.
6. The word is automatically deleted.

Note:

If you hear an error beep, try spelling the word differently (perhaps you misspelled it). In order to delete a word you must enter the correct spelling of the word, not the pronunciation spelling.

Review Words in the Speech Dictionary

Summary:

If you use the dictionary a lot, you may want to review the words in it every now and then. You can find out what words you use and want to keep, or you can note which words you don't use any more and delete them.

To Review Words in the Speech Dictionary:

Remove the keyguard and overlay. Press the TOOLS button on the front of the Pathfinder case to open the toolbox.

Activate the SPEECH DICTIONARY menu.

Review Method: Step or Auto

Step: Activate a key or switch every time you want to move to more words. *Auto:* The Pathfinder moves you automatically through the words.

Review to Display

The dictionary is shown on the Pathfinder's display screen.

➡ You can edit a word or delete a word by activating on the display screen the word that you want. Then select to edit the message or to delete it.

Review to Display and Speaker

You can see the dictionary on the display and hear the Pathfinder speak it at the same time.

Review to Output

You can send the dictionary to a printer or computer. You must be connected with the correct cable and the options in the OUTPUT menu must be set before the information will appear on a printer or computer.

See Appendix C for complete information.

The Speaking Tools

Summary:

These tools help you to communicate easily and promptly. All of these tools work whether you have the speech On or Off. You can assign them to keys or under sequences. Some of these are on your overlay and some are in the All Tools List.

SPEAK WORD: the Pathfinder speaks the last word you typed in Spell mode, or the last word you brought up in Minspeak mode.

SPEAK LAST SELECTION: the Pathfinder speaks the last stored message you activated or the last spelling characters you put on the display. This is helpful if you have to repeat yourself so that someone listening can understand you better, or to get someone's attention.

SPEAK DISPLAY: the Pathfinder speaks everything that is visible on the display screen.

 **Helpful Hint:** when you are *storing* and you want to speak the text you are entering, activate *Speak Display*. The Pathfinder will speak *only* the text being entered, not all the storing instructions.

SPEECH ON/OFF: the default is On. Anything you select or type is spoken. When this is turned Off, nothing is spoken unless you activate one of the tools listed above.

More Speaking Tools in the All Tools List

SPEAK ALL: the Pathfinder speaks all of the text on the display and in the buffer. This tool can also be used with Notebooks.

SPEAK SENTENCE: the Pathfinder speaks the sentence that contains the cursor, or the sentence in between two punctuation marks. This is helpful if you want to hear how something you are working on sounds but don't want to listen to everything that is written on the display. It is

also useful if you are going to give a speech or presentation. People seem to understand synthesized speech better when they hear it one sentence at a time until they get used to listening to it.

SPEAK NEXT SENTENCE

SPEAK NEXT WORD

These tools are to be used with Notebooks. Each time you activate the tool you can speak a Notebook word-by-word or sentence-by-sentence.

SPEAK NOTEBOOK: This speaks the entire content of the Notebook you have selected. You cannot speak part of a Notebook with this tool.

CTRL+any SPEAK tool: When you store this tool in a macro it will perform any SPEAK function if the Pathfinder speech is already turned On.

SPEECH MARKER

TEXT MARKER

TEXT AND SPEECH MARKER

These tools allow you tell the Pathfinder which parts of a message you want to have spoken which are to be seen, but not heard. See the next page for more information.

A Speaking Tool in the FEEDBACK Menu:

SPEAK WHEN SPELLING

Letters

Words

Both

Tell the Pathfinder to speak each letter as you spell it or to speak each word after it is spelled or both.

Using Text and Speech Markers

Summary:

These tools mark text that is to be seen on the display but not spoken or that is to be spoken but not seen. Text & Speech Marker tool closes the operation.

Use the TEXT MARKER tool when you want text from a stored message to be seen on the display, but not spoken. The Text Marker tool goes in front of the text that is to be seen on the display.

Use the SPEECH MARKER tool when you want text from a stored message to be spoken by the Vanguard but not to be seen on the display screen. The Speech Marker tool goes in front of the text that is to be spoken.

Use the TEXT & SPEECH MARKER tool to end the operation where individual speech and text markers were used in a message.

An Example of Using Text and Speech Markers:

Store the "Pledge of Allegiance." When you activate the icons for the pledge, you will see only the title on your display while the Vanguard speaks the pledge.

1. Go to the Toolbox and activate STORE.
2. Select an icon sequence and activate OK.
3. Select ***Spell Text to Speak***.
4. Activate INSERT TOOL.
3. Activate <TEXT MARKER>.
4. Type "The Pledge of Allegiance"
5. Activate INSERT TOOL.
6. Activate <SPEECH MARKER>.
7. Type in the complete Pledge of Allegiance.
8. Activate INSERT TOOL at the end of the pledge.
9. Activate <TEXT AND SPEECH MARKER>.
10. Finish the regular storing process.

Changing Voices Within a Message

Summary:

DECTalk speech allows you to store messages that contain two or more voices. Use the synthesized speech storing method.

You might want to store a message that uses more than one voice. Perhaps you are asked to read something out loud, or you want to tell a joke that has different characters speaking in it.

To use two or more voices you must type in a special code for each voice that you use. The voice code must be entered right before the word that is to be spoken in that particular voice. For example, you could store the following message using a number of different voices:

```
[ :np]Papa Bear said [ :nh]Who's been sitting in my chair?  
[ :np]Mama Bear said [ :nb]Who's been sitting in my chair?  
[ :np]Baby Bear said [ :nk]Who's been sitting in my chair?
```

You can see that it is quite easy to change voices in a message. Just remember to copy the code for each voice exactly as you see it written below. Use small letters, square brackets and no spaces.

```
[ :np] Perfect Paul  
[ :nb] Beautiful Betty  
[ :nh] Huge Harry  
[ :nf] Frail Frank  
[ :nk] Kit the Kid  
[ :nr] Rough Rita  
[ :nu] Uppity Ursula  
[ :nd] Doctor Dennis  
[ :nw] Whispering Wendy  
[ :nv] Variable Val
```

Use the synthesized speech storing process you learned in the **Storing** chapter.

Wait Any Key

Summary:

The Pathfinder waits until you press any key before it speaks.

When you add the WAIT ANY KEY tool to a DECtalk message, you can pause *within* the message, wait for any amount of time, and then activate any key on the keyboard or any switch to continue speaking.

For example, suppose you were going to store a joke under an icon sequence.

The joke is: Why is 6 afraid of 7?
(audience response)
Because 7 8 9!

You might store "Why is 6 afraid of 7?" under one sequence and "Because 7 8 9!" under another sequence. To tell the joke you would have to activate the first sequence, wait for a response and then activate the second sequence to tell the rest of the joke. If you stored the whole joke and used the WAIT ANY KEY tool, you would only have to activate one sequence plus one extra key or switch activation.

To Use the WAIT ANY KEY Tool:

1. Go to the Toolbox. Activate STORE CORE.
2. Select an icon sequence and activate OK.
3. Choose *Synthesized*. Choose *Spell Text for Message*. Type in the message. Remember to use INSERT TOOL and WAIT ANY KEY. For example, in this example type in "Why is 6 afraid of 7?" Then activate INSERT TOOL. Type a "w", then activate WAIT ANY KEY. Type "Because 7 8 9!" (Put spaces between each number.) Activate OK.
4. Activate OK again.

Now when you retrieve this message, the device speaks, "Why is 6 afraid of 7?" and pauses. Wait for the audience response and then activate any key on your keyboard, or a switch, and the Pathfinder will finish the joke.

Connecting to and Using Other Devices



The Default IR SETUP Menu

Connect to Other Devices by Using the Pathfinder Infrared (IR) or By Using a Cable

With Infrared (IR), the Pathfinder can operate remote controlled appliances such as a TV, VCR, radio, etc. The Pathfinder can learn infrared signals for any appliance you want that has a remote control. You teach the remote control signals to the Pathfinder and then store the commands for the signals under icon sequences.

The Pathfinder already knows the signals for X-10 appliance modules and an EZ Phone. To control an X-10 module you must have a Command Center and the X-10 modules. The X-10 system allows the Pathfinder to control the ON/OFF functions of non-remote control appliances such as lamps, fans, etc.

Unity for Pathfinder has pre-stored remote activities that are already set up for you. All you have to do is teach the Pathfinder the correct signals for the activity. You will use the IR SETUP menu for teaching remote signals to the Pathfinder, for adding devices, deleting devices, etc.

With a PRC infrared receiver (IRR) you can use the Pathfinder as a wireless link to a device that does not have built in IR receiving capabilities, such as a computer or printer. All infrared signals are sent from the IR window on the back of the Pathfinder case. When you want to send remote control signals, the back of the Pathfinder must be facing in the general direction of the appliance you want to send the signals to. If you are using an IRR, the top of the Pathfinder must be facing in the general direction of the IR receiver window.

If you do not want to use the Pathfinder's IR, you can use computer emulation or a printer by connecting them to the Pathfinder with an appropriate cable.

 EZ Phone is a speaker-phone designed to work with telephone systems in the US or compatible analog systems. You can purchase an EZ Phone from APT by calling 330-567-2001 in the United States.

OUTPUT MENU				
1	Output Method RS232	4	Output Mode IMMEDIATE	
2	Output OFF	5	Baud Rate 300	8 OK
3	Auto Line Feed OFF	6	Character Pacing OFF	9 Cancel

OUTPUT Menu

The OUTPUT Menu

Whether you are connected by a cable or using Infrared (IR), the Pathfinder and a computer or printer send information to each other through their serial ports or the IR window. Use the OUTPUT Menu to tell the Pathfinder how you want to transmit information. The options in the OUTPUT menu are explained below.

Output Method: use *RS232* when you are connecting to a computer or a serial printer with a serial cable. Use *Infrared* when you are using the Pathfinder's infrared capability. Use *IrDA* when you are going to use a computer or printer with IrDA capabilities.

Output: this must be *On* in order to send any information from the Pathfinder to the computer or printer. When this is *Off*, no information will be sent.

➤ **Note About Remote Control Commands:**

Any remote control commands that you have taught the Pathfinder are automatically sent out the IR window whether or not you have selected *Infrared* or turned *Output On*.

Auto Line Feed: if your printer does not automatically add lines at carriage returns when it prints, turn this option *On*. This tells the printer to add a new line when it sees a carriage return.

Output Mode: If you select *Immediate*, information is sent to a computer or printer immediately after it scrolls off the display screen and into the workspace. If you select *Delayed*, information is not sent to a printer until you activate the RETURN and CLEAR DISPLAY keys on your Pathfinder. ➤ Use *Immediate* to send information to a computer. Use *Delayed* to send information to a printer. ➤ See **Note** on next page.

Baud Rate: The baud rate determines how rapidly information travels from the Pathfinder to the computer or printer. The baud rate can be slow (300) or very fast (57600). The baud rate for your computer and

the baud rate for the Pathfinder must be the same for information to flow between them. The default baud rate for the Pathfinder is 1200.

The baud rate is automatically set to *IrDA* if you selected IrDA for your *Output Method*.

Character Pacing: When this is **On**, the rate at which individual characters are sent from the Pathfinder to a computer emulator is slowed down. You may need to turn this On if you are using a T-TAM and sending large groups of text (e.g., complete sentences) to a computer.

If You Are Connected to a Printer

If you select *Immediate* for your *Output Mode*:

The Pathfinder automatically sends anything over 80 characters to the printer. Activate the **RETURN** tool in the Pathfinder Toolbox to send the rest of the text.

If you select *Delayed* for your *Output Mode*:

Type in your text then select the **RETURN** tool in the Pathfinder Toolbox, then activate **CLEAR DISPLAY**.

You must use the **RETURN** tool in the Toolbox or Spell mode, *not* the *RETURN icon* in Minspeak mode.

To Print a Notebook

Make sure the Notebook is open. Select *Print Notebook* from the NOTEBOOK menu options.

 **Important Note About IrDA:** If you are going to use an IrDA printer, the IrDA window on the printer must be facing the IR window on the Pathfinder. The printer must be no farther than approximately 3 feet away from the Pathfinder IR window. This means that you should line up the Pathfinder IR window and the small IrDA window on the printer. The IrDA window and the Pathfinder IR window will work together as long as they are close enough and within a 30 degree angle of each other.

See **Appendix C** for more information about connecting to a printer.

Using SERIAL MARKER, SPEECH MARKER, and Text and Speech Markers when you Store Infrared Commands

SERIAL MARKER: This is used when you want the Pathfinder to send information out the serial port without having it speak or display the information in the command. If you use INSERT TOOL and SERIAL MARKER before you begin to enter a command, and INSERT TOOL and SERIAL MARKER at the end of the command, the command will be sent out the serial port without being spoken. **Serial** does not have to be **On** for the Pathfinder to send stored commands out the serial port.

CTRL SERIAL MARKER will send the marked text out the serial port **only** when **Serial** is turned **On**.

SPEECH MARKER: This is used when you want to hear a prompt that tells you what the command is that you are sending. You do not see the prompt, just hear it. For example, if you want the Pathfinder to indicate that you sent the correct command, store a prompt like "Channel Up", which the Pathfinder will speak. Use INSERT TOOL and SPEECH MARKER in front of the prompt, then enter the prompt. Every time you activate the remote control <CHANNEL UP> sequence, the Pathfinder will speak, "Channel Up" and the command will be sent to the computer. You use the two tools above when you store commands for computer emulation and environmental control use.

You can also use **TEXT MARKER**, **SPEECH MARKER** and **TEXT AND SPEECH MARKER** when you store commands. See page 66 for information about these insertable tools.



Learning IR Signals Area



Infrared Transmitting Signals Area

About Teaching Remote Control Commands to the Pathfinder

Your Activity Row contains an Activity called REMOTES. When you select this activity you will see separate activities for various devices that can be run by remote control, e.g., TV, VCR, etc. Inside these separate activities you will find icons and commands that represent various remote control signals. For all appliances except the EZ Phone and X-10, you will have to teach the Pathfinder the signals you want it to use.

Before you begin to store any signals, you need to have the remote control you are going to use nearby. During the signal storing process the Pathfinder will tell you to aim your remote control at the Pathfinder's learning IR window and then to tap the button on the remote that will send the signal you want the Pathfinder to learn.

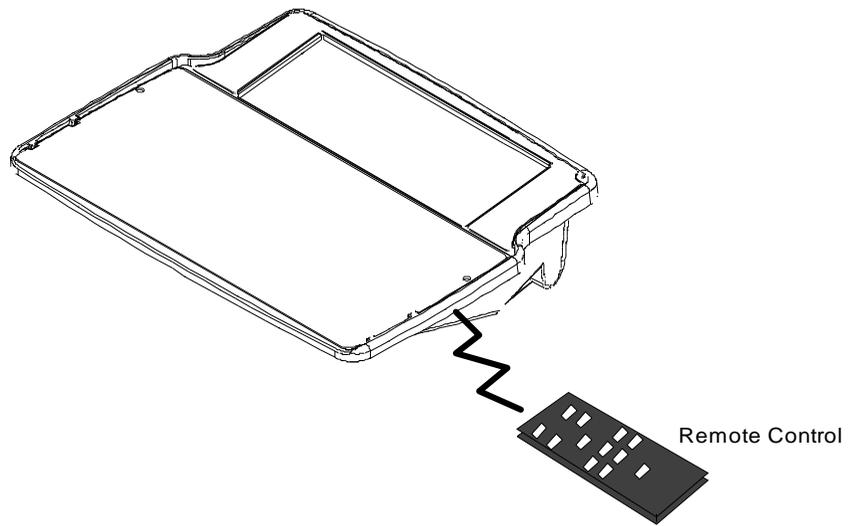
➡ Remember, the learning IR area on the Pathfinder is on the right side of the case as you look at the device. Place the remote control on the table 6-8 inches away from the IR window. Point the infrared area of the remote control at the Pathfinder's IR area and press the function button on the remote control, for example, "power". You will hear a beep when the Pathfinder accepts the remote control signal.

To store signals you will use the IR SETUP menu in the Toolbox.

📌 Important Note!

When you have finished storing all remote control signals that you want to use, we **highly recommend** that you perform a memory transfer and save the Pathfinder's memory to a computer disk.

You must save the *Entire Device* memory. Remote control signals **will not be saved** if you only save an Area.



Pathfinder Learning Remote Control Signal

Teach Remote Control Signals to the Pathfinder

Teach remote control signals for devices that are already stored in the Pathfinder.

1. Go to the Toolbox and open the IR SETUP menu.
2. Activate the *Device* box and select device whose signals you want to teach to the Pathfinder, e.g, TV.
3. When the name of the device you want in visible in the *Device* box, activate the *Modify Device* option.
4. Activate the *Function* box and select the function you want the Pathfinder to learn, e.g., "Power".
5. Get the remote control ready. Know which button you want to press on the remote. Place the remote on the table so that the IR area on the remote is pointing to the Learning IR window on the Pathfinder. The remote should be 6"-8" away from the Learning IR window.
6. On the Pathfinder, activate the *Re-learn IR Signal* option.
7. On the remote control, press the function key you want, e.g., the "Power" key.
8. If you are near the device you want the Pathfinder to control, you can test the signal. Point the Pathfinder IR window (⊖ this is the area on the top back of the case on the right, **not** the Learning IR area) toward the device you are testing (e.g., the TV) and activate the *Test Signal* option in the IR SETUP menu.
9. Repeat steps #4-8 for each remote control function you want the Pathfinder to learn. You can exit by activating OK twice, or you can select another device and continue to teach signals.

When you have finished storing signals, go to that remote control activity and explore what you have done!

1. Exit the IR SETUP menu.
2. In the Toolbox, activate GO TO MINSPEAK.
3. Activate the REMOTES key in your Activity Row.
4. Select the device activity you want and see if your signals work.

➡ **If the Pathfinder does not seem to learn the signals:**

Depending on the remote that you are using, you may have to place it closer to the Pathfinder's Learning IR window (only 1-2 inches away) rather than 6-8 inches away.

➡ Remember to save the Pathfinder's memory after you have taught it the remote signals. Use *Save Entire Device* option. See the *MTI Manual* for information about making memory transfers.

Add a New Device to the IR SETUP Menu

Suppose you buy a new TV for your bedroom and you want to teach its signals to the Pathfinder. The IR SETUP menu does not list a second TV in its Device menu, so you will have to add your new TV to the menu.

To Add a Device to the IR SETUP Menu:

1. Go to the toolbox and open the IR SETUP menu.
 2. Activate the *Add a Device* option.
 3. Spell the device name, (e.g., TV2) and activate OK.
- ➡ You can use up to 15 characters for a device or function name.
4. Spell the name of the first remote function that you want to teach the Pathfinder, e.g., "Power"), then activate OK.
 5. Teach the remote control signal to the Pathfinder.
 6. Continue to add functions and teach signals following these steps, or exit the menu.

Once you have added the new device and its functions and taught the signals to the Pathfinder, you must decide how you want to store the signals so that you can use them. Do you want the signals to be part of your REMOTES activity? Or, do you want to store them under different icon sequences on your overlay?

As an example, let's say you want to store the TV2 functions in a TV2 activity and you want this activity to be part of your REMOTES activity. First, you might find it helpful to go to the Toolbox and activate the Modify Activity option in the ACTIVITY menu. Then select one of the remote control activities to look at. Do you see any keys that you will want to add to your TV2 activity so that they will be consistent with other remote activities? You might write these keys down so you don't forget them or confuse their positions when you add functions to your TV2 activity.

Create a TV2 Activity

Now, let's create a TV2 activity.

1. Go to the Toolbox and open the ACTIVITY menu.
2. Activate the *Create Activity* option.
3. Choose an icon to represent the activity.
4. Spell the name for the new activity (e.g., TV2).
5. Now you must choose a key to define. These will be the keys where you assign the TV2 functions. Pick a key where you would like TV2 POWER to go.
6. When you have selected a key, choose *Spell Text for Message*.
7. Select INSERT TOOL, activate *More Items* until you see IR COMMAND. Select it. Select TV2, select POWER and then select OK.
8. Pick an icon for your key and change the label if you want.
9. Select the next key and repeat these steps until you have stored all the functions for TV2.

Place the TV2 Activity in your REMOTES Activity

Now place your TV2 activity into your REMOTES activity so you can access it from the Activity Row.

1. Go to the Toolbox and activate the ACTIVITY menu. Activate the *Modify Activity* option.
2. Select the REMOTES activity.
3. Select *Modify Option within Activity*.
4. Choose an empty location where you can add TV2.
5. Select *Spell Text for Message*.
6. Select INSERT TOOL, activate *More Items* until you see SET ACTIVITY. Select it. Choose TV2. Change the icon and label if you wish.
7. Activate OK. Then activate GO TO MINSPEAK.
8. Activate the REMOTES activity in the Activity Row to see if your TV2 activity is there. Try it out.

How to Store the TV2 Functions under an Icon Sequence

If you don't want to add a TV2 activity to your REMOTES activity, you can always store it under an icon sequence on your overlay.

To Store TV2 (or any remote control device and its functions) under an Icon Sequence:

1. Go to the Toolbox and select STORE CORE.
2. Choose the icon sequence you want to store the command under.
3. Activate OK.
4. Select Spell Text for Message.
5. Select INSERT TOOL. Activate More Items until you see IR COMMAND, then select it. Select TV2, select Power, select OK. Modify the last picture and change the icon if you want.
6. Select OK when you are finished.
7. Repeat these steps until all the TV2 functions are stored under icon sequences.

➡ No matter where you decide to store remote control functions, the formula you will use is always:

INSERT TOOL, IR COMMAND, DEVICE NAME, FUNCTION NAME

➡ Remember to save the Pathfinder's memory after you store remote control signals. Use the Save Entire Device option. See the MTI Manual for information about making memory transfers.

Delete a Device; Rename a Device

You can delete devices from the IR SETUP menu. You can also rename an existing device.

To Delete a Device:

1. Go to the Toolbox and open the IR SETUP menu.
2. Select the device you want to delete.
3. Activate the *Delete Device* option.
4. Activate *Yes* to delete; *No* if you change your mind.

When you delete a device from the IR SETUP menu, you may also want to delete the device activity. Open the ACTIVITY menu and activate the *Delete Activity* option. Select the activity that you want to delete. Activate *Yes*. Activate OK.

To Rename an Activity

1. In the Toolbox, open the IR SETUP menu.
2. Select the device you want to rename.
3. Activate the **Rename Device** option.
4. Spell the new name, then activate OK.

If you have stored the device under an icon sequence:

Delete the sequence you used by following the ERASE CORE procedure.

IR SETUP MENU		
1 Add A Device	4 Rename Device	
2 Modify Device	5 Device TV2	8 OK
3 Delete Device		9 Cancel

Add, Modify, or Test TV2 Functions		
1 Add A Function	4 Re-Learn IR Signal	
2 Rename Function	5 Test Signal	8 OK
3 Delete Function	6 Function	9 Cancel

Spell new TV2 function name, then OK	
MUTE	
	OK
	Cancel

Add, Modify, or Test TV2 Functions		
1 Add A Function	4 Re-Learn IR Signal	
2 Rename	8 OK	
3 Delete F	8 OK	9 Cancel

To learn signal: Aim remote at IR window and tap remote button for TV2, MUTE

CONNECTING TO AND USING OTHER DEVICES

Add a New Function to an Existing Device

Perhaps you didn't add all the TV functions that you wanted to use to your TV2 activity. You can add new functions to a device that is already in the IR SETUP menu.

1. Go to the Toolbox and open the IR SETUP menu.
2. Select the device you want to add a function to (e.g., TV2).
3. Select ***Modify Device***.
4. Select ***Add a Function***.
5. Type in the name of the function you want to add (e.g., MUTE) and activate OK.
6. Place the remote control on the table 6"-8" away from the Pathfinder with the remote IR window pointing at the Learning IR window on the Pathfinder. (You can also hold the remote in your hand following these same guidelines.) Press the key for the remote function that you want to add.
7. Test the signal using the ***Test Signal*** option in the menu.
8. Continue to add functions or activate the OK key to exit the menu.

Once the function is added to the IR SETUP menu, you must add it to the device activity. (In some cases, the function may already be in the activity.)

1. Open the ACTIVITY menu in the Toolbox. Select the Activity you want to modify.
2. Select the ***Modify Activity*** option.
3. Select the key where you want to put the new function.
4. Choose ***Spell Text for Message***.
5. Select INSERT TOOL, activate More Items until you see IR COMMAND, then select it. Select TV2. Select MUTE. Select OK.
6. Pick an icon for your key and change the label if you want.
7. Repeat these steps until you have stored all the functions you want for TV2.

If you have been storing functions under icon sequences, you must also store any new functions you have added. Follow the STORE CORE procedure.

➡ If the Pathfinder does not seem to learn the signals:

Depending on the remote that you are using, you may have to place it closer to the Pathfinder's Learning IR window (only 1-2 inches away) rather than 6-8 inches away.

Rename a Function

You can rename any function in the IR SETUP menu.

1. Go to the Toolbox and open the IR SETUP menu.
2. Select the device for the function you want to rename.
3. Select ***Modify a Device***.
4. Select the function you want to rename.
5. Select ***Rename a Function***.
6. Spell the new name for the function.
7. Activate OK.

The new name automatically replaces the old one wherever you have it stored.

Delete a Function

You can delete any function from the IR SETUP menu.

1. Go to the Toolbox and open the IR SETUP menu.
2. Select the device that has the function you want to delete.
3. Select *Modify a Device*.
4. Select the function you want to delete.
5. Select *Delete a Function*.
6. Activate YES to delete, NO if you change your mind and decide not to delete.
7. Activate OK.

You may also want to delete the function from its device activity. Use the *Modify Activity* procedure in the ACTIVITY menu.

If you have been using icon sequences, you must delete the sequence you stored the function under. Use the ERASE CORE procedure.

Re-Learn Signals

Suppose you have to buy a new remote control for your TV. You will need to teach the new signals to the Pathfinder. ➡ You do not have to create a new device. You can use the old device and teach it the new signals. For example, you can use the original TV (or TV2) device category and just teach the new remote signals.

To Re-learn Signals:

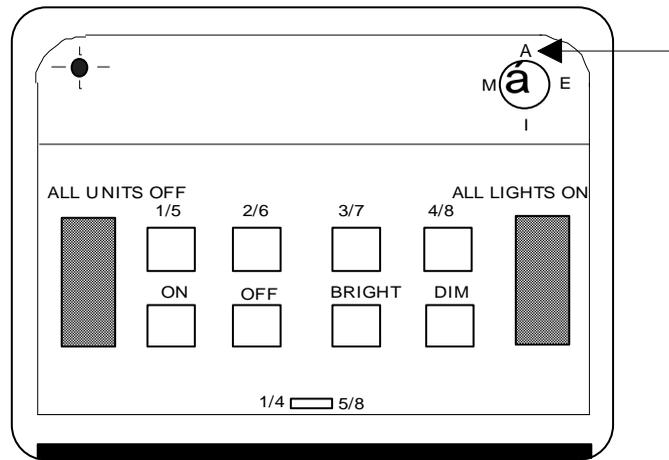
1. Go to the Toolbox and open the IR SETUP menu.
2. Select the device that has the signals you want the Pathfinder to relearn.
3. Select *Modify a Device*.
4. Select the function to re-learn.
5. Select *Re-learn a Signal*.
6. Place the remote control on the table 6"-8" away from the Pathfinder with the remote IR window pointing at the Learning IR window on the Pathfinder. (You can also hold the remote in your hand following these same guidelines.) Press the key for the remote function that you want the Pathfinder to re-learn.
7. Test the signal.
8. Repeat #4-7 until you have taught the Pathfinder all the new signals.

The new signals will automatically replace the old signals whether they are in an activity or stored under icon sequences.

➡ If the Pathfinder does not seem to learn the signals:

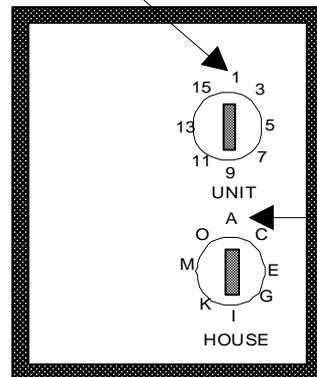
Depending on the remote that you are using, you may have to place it closer to the Pathfinder's Learning IR window (only 1-2 inches away) rather than 6-8 inches away.

COMMAND CENTER Receiver



A Unit code (number) must be given to **each** appliance

Make sure the two HOUSE codes are the same



Appliance Power Module

Setting Up the X-10 Modules

The X-10 activity is set up to control up to 9 X-10 appliance modules. The HOUSE Code defaults to "A". You can get to the X-10 activity by opening your REMOTES activity and selecting X-10.

On the front of each module there are two small circles. One is labeled UNIT and has the numbers 1-16 around it. The other circle is labeled HOUSE and has the letters A-P around it.

When you plug an appliance (e.g., a lamp) into a module, you must give the appliance its own UNIT code. The code is a number from 1-16. You must also give all the appliances plugged into the modules the same HOUSE code. If you are using the modules in your home, the HOUSE code will be "A". If you are using them in a hospital or center, ask what HOUSE code you should use.

Plug the Command Center into a working wall outlet. Set the HOUSE code (on the upper right of the case), to "A" (or whatever the HOUSE code is that you are using).

To Set Up the Modules:

1. Plug an appliance into a module.
2. Hold the module in your hand. Place a small screwdriver or a dime into the groove labeled HOUSE on the front of the module. Turn the groove so that it points to the letter "A". Do this for each module that you are going to use.
3. Now stick the screwdriver or dime into the groove labeled UNIT on the front of the module. For the first appliance, turn the groove to the number "1". For a second appliance, turn the groove to the number "2". Each module that you use must have a different UNIT code from any other module. You can have up to 16 UNIT codes.
4. Plug the module into a working wall outlet.
5. Turn the appliance On using the on/off switch on the appliance.

Open the IR SETUP menu in the Pathfinder Toolbox. Select X-10. Select the option that corresponds with your appliance number. The command for that number is already stored in the Pathfinder.

If you need more than 9 On-Off commands, add a new row to the X-10 activity. Open the ACTIVITY menu, select the REMOTES activity, select X-10, select **Modify Activity**, select *Add New Row*.

➡ The infrared area on the Pathfinder and the infrared area of the Command Center must be able to “see” each other when you send signals. If something blocks this line-of-sight, the signals cannot get through and the command cannot be performed.

Adding Phone Numbers to the EZ Phone Activity

If you are using an EZ Phone, you will want to add important and frequently used phone numbers to the EZ Phone activity so that you can dial these numbers quickly.

The EZ Phone activity currently has 3 rows. Row 1 contains some pre-stored telephone functions and the emergency 911 number. Row 2 contains the individual dial numbers (0-9) which are continued in Row 3. Use these numbers to dial phone numbers of people you want to talk to. The rest of Row 3 contains four blank Directory keys where you can store your own phone numbers. (Each key with a phone number stored with it is called a Directory.)

To Add Phone Numbers to the Blank directory Keys in Row 3:

1. Go to the Toolbox and open the ACTIVITY menu.
2. Select the **EZ Phone** activity.
3. Select the *Modify Activity* option.
4. Select *More Items*.
5. Select *Next Row two times*.
6. Select **Directory 2**, then select *More Items two times*.
7. Activate *Spell Text for Message*. **DO NOT DELETE** the DIAL command that is already in place (i.e., <IR(EZ PHONE,DIAL)>). Just type in the phone number you want to store immediately following the DIAL command.
8. Activate OK.
9. You can add a label and/or an icon to the Directory to remind you of the number, e.g, "PIZZA". You can also use the *Change Position* options in the ACTIVITY menu to change the position of the keys in the rows if you want to.

Repeat these steps for each Directory number you want to store.

If You Want to Store More than Four Numbers

If you want to store more than four numbers, select the *Add New Row* option in the EZ Phone activity in the ACTIVITY menu. With a new row, you must add the DIAL command to each key you want to add a phone number to.

To Add the DIAL Command:

You can use the editing tools to cut and paste the dial command from another key to your new key or you can add it by doing the following:

1. Activate INSERT TOOL
2. Activate More Items until you see IR COMMAND. Select it.
3. Activate EZ PHONE.
4. Select DIAL.

Once you have the DIAL command in the text box, type in the phone number you want to use and activate OK.

 Remember to add a *More Items* key to this new row so you can move between rows.

When you have finished storing your numbers, exit the ACTIVITY menu. Activate GO TO MINSPEAK. Activate the REMOTES activity in the Activity Row. Activate EZ Phone and call someone!

About Keyboard Emulation with Infrared and without Infrared

To use the Pathfinder with a computer (with or without IR), you must have a computer emulation device like the T-TAM, or computer emulation software like SerialKeys, Access Windows, Accessibility Options, etc.. If you are not using infrared to access your computer, you will connect your T-TAM directly to your computer and to your Pathfinder. If you are using emulation software, you will connect your Pathfinder to your computer. If you are using infrared, you will connect the T-TAM to your computer and to the Infrared Receiver (IRR). The IRR will receive infrared signals from the Pathfinder and send them to the emulator. If you are using IR and computer emulation software, connect the IRR to the serial port on your computer.

In order to use the computer emulation part of your overlay you must have the GO TO COMPUTER tool stored under an icon sequence or assigned to a key on your overlay. This is already stored under the icon sequence TOOLS+COMPUTER on the Unity overlay.

When you are using computer emulation you must have the correct options set in the OUTPUT menu. If you are using infrared, you must set *Output Method* to *Infrared*. If you are not using infrared, you must set *Output Method* to *RS232*.

If you use infrared, the Pathfinder is set up to send information by *Packet, Unit #1, 1200 baud* in the IR SET UP menu. See the Infrared Troubleshooting section of this chapter beginning on page 131.

 **Remember:** You can use computer emulation with or without IR.

About Using a Software or Hardware Emulator

An emulator is required to send information from the Pathfinder or an IRR to a computer. The Pathfinder is compatible with the T-TAM and the KE:NX, which are hardware emulators. It is also compatible with several software emulators.

The T-TAM is a hardware emulator that works with an Apple IIGS, a Macintosh or an IBM computer or clone. The IBM computer must have a PS/2 mouse port to use the mouse features on the computer access part of your overlay. The Macintosh must use the Apple Desktop Bus (ADB™) for mouse and keyboard connections. The T-TAM is available from PRC.

Software emulators include Serial Keys for Macintosh, AccessDos for DOS, Access Pack for Windows 3.1 and the Accessibility Options in Windows 95 and 98. Your computer must have a serial port available in order to use these software programs. The MTI cable that comes with the Pathfinder is also used to connect the Pathfinder to a computer.

➡ To set up the T-TAM, see the **Connect Your T-TAM** chapter in the **T-TAM Manual**. Use the **KE:NX Manual** to connect the KE:NX to your device and a computer. Then return to this chapter.

T-TAM is a product sold by Prentke Romich Company.
KE:NX is a product sold by Don Johnston, Inc.

Using an Infrared Receiver (IRR)

To send infrared commands from the Pathfinder to a device that does not have a built in Infrared Receiver, such as a computer or printer, you must connect the infrared receiver (IRR) to the device that is going to be receiving the infrared signals.

The IRR is an infrared accessory that accepts infrared signals from the Pathfinder. The IRR plugs into whatever device you are using it with. For example, to use an IRR with a printer, plug the IRR into the serial or parallel port on the printer. If you are using emulation software with your computer, plug the IRR into a free serial port on your computer. To use an IRR with a T-TAM and computer, plug the IRR into the front of the T-TAM. In all cases, the IRR replaces the cable you might have used to connect your Pathfinder to a printer or computer.

The infrared window on the IRR must be able to see the infrared area on the Pathfinder. (The infrared area on the Pathfinder is the upper right corner on the top of the device.) If the IRR and Pathfinder cannot see each other, the IRR will not receive the signals that the Pathfinder sends. However, if the IRR and Pathfinder windows are **closer** than 18 inches and directly facing each other, the infrared signals from the Pathfinder may be too strong for the IRR to read. Either move the devices farther apart or place the Pathfinder so that its IR window is at an angle to the IRR.

- ➡ When you are using an IRR, always have the IRR battery charger plugged in.
- ➡ For IRR cable and settings information read the **Infrared Receiver Instructions** that came with your IRR. These instructions also contain a list of IRR commands that can be stored in your Pathfinder.
- ➡ The recommended baud rate for the Pathfinder with an IRR is 1200. If you use a T-TAM that operates at 300 baud, contact the PRC Service Department to have the T-TAM upgraded to support 1200 baud.

Setting Up a Computer Emulation Software Program

To prepare your computer and Pathfinder for computer emulation you must set up your emulation software and connect the computer and Pathfinder (or IRR) with a cable that came with your Pathfinder.

On the Pathfinder:

1. In the Toolbox, open the OUTPUT menu.
2. In *Output Method* select **IR** if you are using the IRR, or **RS232** if you are connected to the Pathfinder.
3. Set *Serial Output* to **On**.
4. Set *Output Mode* to **Immediate**
5. Set *Baud Rate* to **1200**.
6. Activate **OK** to exit the menu.

Accessibility Options for IBM PC's and Clones Running Windows 95 or 98

1. Open the *Start* menu.
2. Click on *Settings*.
3. Click on *Control Panel*, then click on *Accessibility Options*.
4. Click on the *General* tab.
5. Click on *Support SerialKeys Devices* so that a check appears in the box beside the option.
6. Click on the *Settings* box.
7. Select a free *serial port* that you can use to connect the computer and the Pathfinder.
8. Select a *baud rate*. The Pathfinder defaults to **1200**. The computer baud rate and the Pathfinder baud rate must be the same.
9. Click on *Apply*. Then click on **OK**. Exit all menus.
10. Open the *Start* menu again and click on *Shut Down*.

11. When the computer has turned off, take the **null modem cable** that came with your Pathfinder. Plug one end of the cable into the serial port on the computer that you selected from the Accessibility menu. Plug the other end of the cable into the connector that has the picture of the computer on the top of the Pathfinder. If you are using an IRR, plug the other end of the null modem cable into the computer port on the IRR.
11. Turn the computer back on.

On the Pathfinder:

1. In the Toolbox, open the USER AREA menu.
2. Select the *Computer Access* option.
3. Choose *Older Mac, Newer Mac* or *IBM*.
4. Select *Calibrate Mouse*. Notice on the computer that your cursor is now in the upper left corner of the computer screen.

In order for the Pathfinder to calculate how large your computer screen is, you must move the computer cursor from the upper left corner of the computer screen to the lower right corner. You do this by activating the large and small movement buttons in the menu on the Pathfinder display.

When you have calibrated the mouse, activate OK. Activate OK again to exit the USER AREA menu.

⤷ IMPORTANT NOTE: Pay attention as you move the cursor. If the cursor goes off the edge of the screen, you must start over. Use large movements to move down or across the screen. As you get near the bottom or sides, use small movements. You will not be able to go completely into the corners.

On your computer, open an application like Microsoft Word. Begin to type letters from your Pathfinder. They should appear on your computer screen.

Setting Up SerialKeys for the Macintosh

SerialKeys is a product of the Trace Research and Development Center at the University of Wisconsin-Madison. You can call them and ask for a SerialKeys disk, or you can download a copy from their web site.

The phone number is: 608-262-6966.

The web address is:

<http://trace.wisc.edu/world/computer-access>

On the Pathfinder:

1. In the Toolbox, open the OUTPUT menu.
2. In *Output Method* select *IR* if you are using the IRR, or *RS232* if you are connected to the Pathfinder.
3. Set *Serial Output* to *On*.
4. Set *Output Mode* to *Immediate*
5. Set *Baud Rate* to *1200*.
6. Activate *OK* to exit the menu.

On the Computer:

1. Turn the Mac off.
2. Find the Mac cable that came with your Pathfinder. Plug one end into a free port on your Mac (either the Modem or Printer port). Plug the other end of the cable into the connector that has the picture of computer on the top of the Pathfinder. If you are connecting to the IRR, plug the free end of the Mac cable into the computer connector on the IRR.
3. Re-start the Mac.
4. Install the SerialKeys program.
5. Double click on the SerialKeys icon to open the program.
6. Open the Serial Setup Menu in the menu bar.
7. Select the port on your computer that you plugged the Mac cable into.
8. Select the baud rate you want. The Pathfinder defaults to 1200 baud. The Pathfinder and computer baud rates must be the same.

On the Pathfinder:

5. In the Toolbox, open the USER AREA menu.
6. Select the *Computer Access* option.
7. Choose *Older Mac, Newer Mac* or *IBM*.
8. Select *Calibrate Mouse*. Notice on the computer that your cursor is now in the upper left corner of the computer screen.

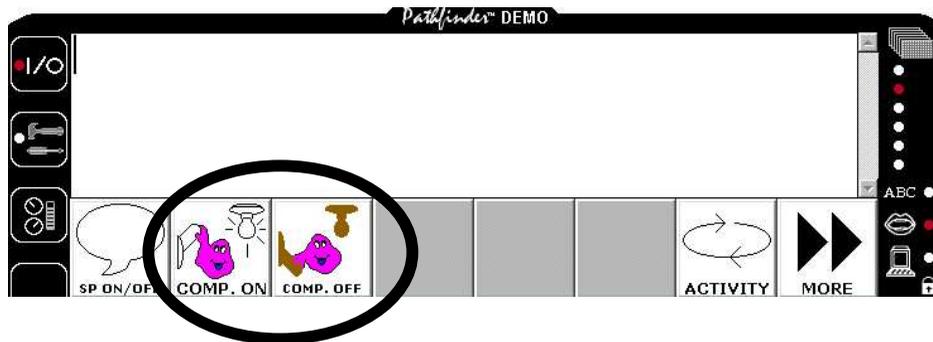
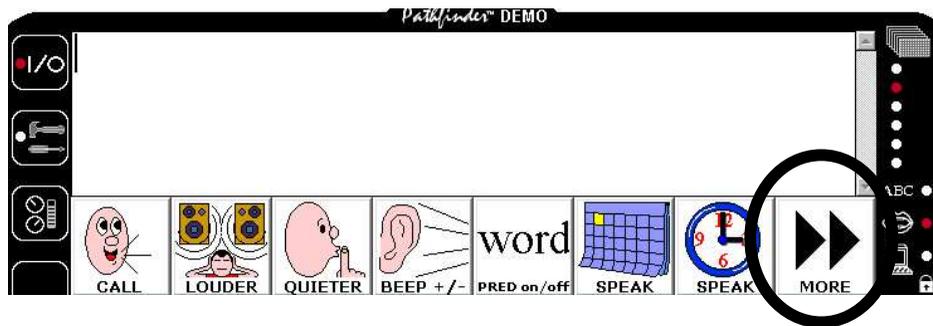
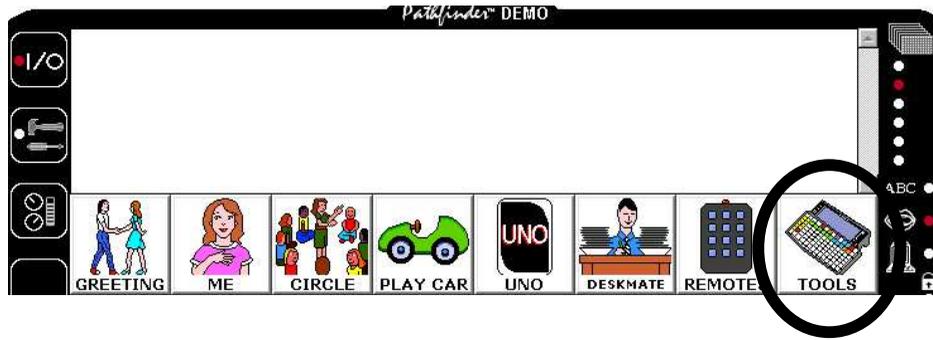
In order for the Pathfinder to calculate how large your computer screen is, you must move the computer cursor from the upper left corner of the computer screen to the lower right corner. You do this by activating the large and small movement buttons in the menu on the Pathfinder display.

When you have calibrated the mouse, activate OK. Activate OK again to exit the USER AREA menu.

 **IMPORTANT NOTE: Pay attention as you move the cursor.** If the cursor goes off the edge of the screen, you must start over. Use large movements to move down or across the screen. As you get near the bottom or sides, use small movements. You will not be able to go completely into the corners.

On your computer, open an application like Microsoft Word. Begin to type letters from your Pathfinder. They should appear on your computer screen.

On your computer, open an application like Microsoft Word. Begin to type letters from your Pathfinder. They should appear on your computer screen.



Set Up Communication with your Computer

CONNECTING TO AND USING OTHER DEVICES

Pathfinder Manual: Power Tools

About Computer On and Computer Off

To send information to the computer, your Pathfinder and computer must be communicating with each other. To set up communication, you activate a pre-stored **Computer On** sequence. This turns the serial port On. There is another pre-stored **Computer Off** sequence to use to turn the serial port Off. These two commands simply turn the serial port On or Off. They **do not** turn your computer itself On or Off.

➡ **Note:** The Serial Port can also be turned on or Off in the OUTPUT MENU.

To Turn Computer Communication (serial port) On or Off:

To turn Computer On: activate the TOOLS activity in the Activity Row. Activate MORE ITEMS. Activate the COMP ON icon.

To turn the Computer Off: activate the TOOLS activity in the Activity Row. Activate MORE ITEMS. Activate the COMP OFF icon.

When you have activated **Computer On**, you can use Spell or Minspeak modes to generate text that will go to the computer. All the alphabet keys, Minspeak sequences, the arrow keys, the DELETE CHARACTER and SHIFT keys will work exactly as they do in Minspeak or Spell, except now your text will appear on both the computer screen and the Pathfinder display. If you activate a left arrow key while you are in Computer mode, the cursor on your computer screen will move to the left. If you activate DELETE CHARACTER, the character to the left of the cursor on your computer screen is deleted.

➡ If you speak to someone when **Computer On** is active, any text you generate will be sent to the computer. If you want to speak and not have it all go to the computer, activate **Computer Off**, speak and then activate **Computer On** when you are ready to work on the computer again.

Using Computer Mode

When you want to use the computer mouse, the function keys, special menus or other more advanced computer tools, you will use the Mouse/Computer overlay that came with the Pathfinder. You will also have to put the Pathfinder in **Computer mode**.

Place the Mouse/Computer overlay on top of your Unity overlay. You can use both the Unity overlay and the Mouse/Computer overlay together as long as computer communications are turned On and you are in Computer mode.

Computer mode is a special mode that allows you to use the mouse/computer overlay. If you are working with graphics or spreadsheets or applications that require mouse movements or special computer commands, you will want to use the mouse/computer overlay. If you are just working in word processing application, you probably will not need to use this overlay.

In order to use the mouse/computer overlay you must activate the **Computer On** sequence (see previous page) and you must also be in **Computer mode**.

To Go To Computer Mode:

To go to Computer mode, you must be in Minspeak mode. Activate this

sequence: TOOLS+ COMPUTER ,   .

Once you are in Computer mode, you can use the overlay for mouse movements, etc. However, the overlay limits your ability to enter plain text into the computer. If you want to switch to doing word processing,

activate the SPELL/MINPSEAK key,  to return to Minspeak.

From Minspeak you can activate the Computer mode sequence to return to using the mouse/computer overlay.

Basics for Using the Computer

Make sure both the computer and your Pathfinder are turned on.

On the computer, open a word processing application and a file you can type into.

On the Pathfinder activate the **Comp On** icon in the **TOOLS** Activity:

Use Minspeak and/or Spell modes to create letters, words or phrases on the Pathfinder. The text is sent to the computer and appears on the computer display and the Pathfinder display. Try writing whole sentences. The text should appear on the both displays.

To Edit Text:

You can edit any text you send to the computer by using the following keys:

ARROW keys: select an arrow key on your Unity overlay. The cursor on the computer screen should move the same direction as the arrow points.

DELETE CHARACTER key: select DELETE CHAR on the Pathfinder. The computer should react as if its <Backspace> key had been pressed. The cursor should move one space to the left and either delete a character if there is one there, or wait for further keystrokes.

SHIFT key: activate the SHIFT key once on the Pathfinder and then activate a letter. The letter should appear as a capital letter on the computer screen.

Each of these keys will work the same whether you are in Minspeak or Spell modes.

RETURN () key:

If you are using an IBM computer, the RETURN key on your overlay acts as the IBM <Enter> key. Activate the RETURN key from Spell Mode.

If you are using a Macintosh, the RETURN key on your overlay acts as the <Return> key on the Mac. Activate the RETURN key from Spell mode.

If you want to use your Pathfinder to speak, or if you want to quit using the computer, you must turn the computer communication Off. Select

the Computer Off sequence,   . To return to using the computer,

select the computer On sequence,   . Select both these sequences in Minspeak mode.

How to Access Other Computer Keys

Computers allow you to make modified keystrokes. You hold down a modifier key and activate one or more keys. Both IBM and Macs allow you to use modifier keys to perform shortcuts for other actions. For example, on an IBM if you hold down the <CTRL> key and activate the <s> key, the computer will save your work.

You can also use the <WINDOWS FLAG> key or the <WINMAC> keys on the computer to accomplish certain tasks. These are available to you from the Pathfinder, too.

On the following pages you will find a list of IBM and Macintosh computer keys and how to access them from the Pathfinder.



**IBM and Mac Computer Keys
on the following pages**



Pathfinder Access to IBM Keys

IBM Keys	Accessed from Which Mode?	Pathfinder Location	Pathfinder Icon
F1-F12	C	C2-M2; M3	
Arrow Keys	M/S/C	N2, O1, P2, O3	←↑→↓
Tab	C	A4	
Home	S/C	N1	
End	S/C	N3	
Page Up	M/S/C	P1	PAGE UP
Page Down	M/S/C	P3	PAGE DOWN
Delete	M/S/C	P7	
Esc	C	A3	
Enter	S/C	N7	
Control	S/C	D8	ctrl
Alt	S/C	F8	
Windows Flag	S/C	E8	blank

Access Mode:

M = Minspeak

S = Spell

C = Computer (must use Mouse/Computer Overlay and be in Computer Mode)

Pathfinder Access to Macintosh Keys

Macintosh Keys	Accessed from Which Mode?	Pathfinder Location	Pathfinder Icon
F1-F12	C	C2-M2; M3	Various
Arrow Keys	M/S/C	N2, O1, P2, O3	← ↑ → ↓
Tab	C	A4	
Home	S/C	N1	
End	S/C	N3	
Page Up	M/S/C	P1	PAGE UP
Page Down	M/S/C	P3	PAGE DOWN
Delete	M/S/C	P7	
Esc	C	A3	
Return	S/C	N7	
Control	S/C	D8	ctrl
Option	S/C	F8	
WINMAC	S/C	E8	blank

Access Mode:

M = Minspeak

S = Spell

C = Computer (must use Mouse/Computer Overlay and be in Computer Mode)

Using the Mouse/Computer Overlay to Move the Mouse

Some computer functions are accessible only by using the Mouse/Computer overlay in Computer mode. These include the <F1-F12> functions, computer menus and the <Tab> and <Esc> keys. Also, the computer mouse can only be used from this overlay.



Remember: to use the Mouse/Computer overlay, place it over

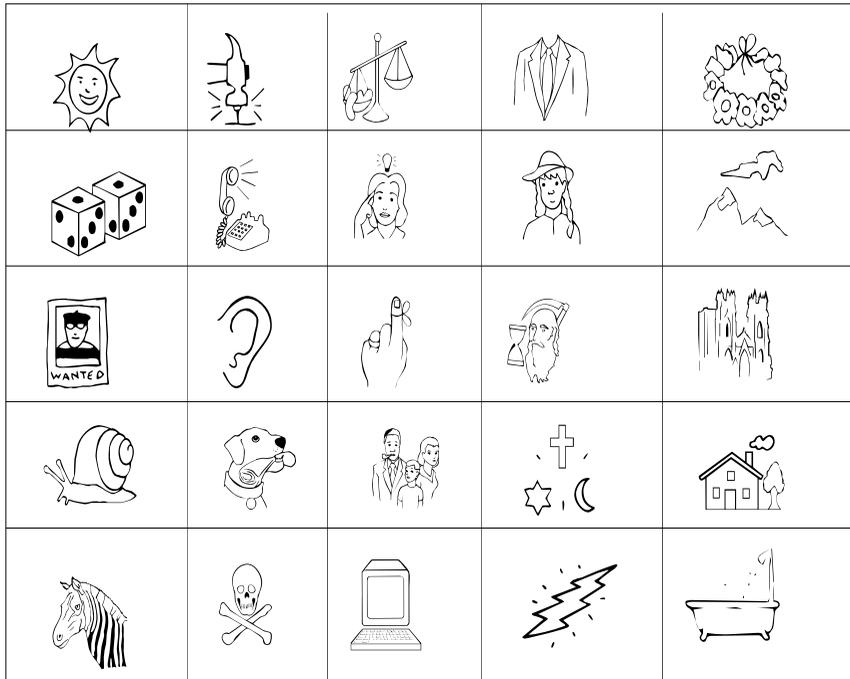
your Unity overlay and then select   to go to Computer mode.

There are two different grids for moving the mouse cursor on the Mouse/Computer overlay.

The **Small Movement Grid** moves the mouse in small or large steps in any direction. This is the larger of the two squares on the overlay.

The **Regional Movement Grid** moves the cursor to a specific location on the computer screen. This is the smaller of the two squares on the overlay.

These two grids and how to use them are described in the next two pages.



Mouse Small Movement Grid

Using the Small Movement Grid

The Small Movement Grid is the larger square on your Mouse/Computer overlay. The grid allows you to move the mouse cursor in steps in any direction. The corners of the grid should be at these locations on top of your Unity overlay: D3, H3, D7, H7.

➡ You must have **Computer On** and be in **Computer Mode** to use this overlay.

The outer keys in the square, outlined in **green**, move the cursor a **large step**. The inner keys, outlined in **yellow**, move the cursor a **small step**.

In the middle of the square there is a key outlined in **red** (the REMEMBER  icon). This key acts as a **single-click** mouse button. *This key **does not** move the cursor.*

The Small Movement Grid works like a joystick. The red  key is the center point. The different colored keys surrounding the center move the cursor in the direction they are positioned from the center. For example:

Icons *below*  (e.g., , ) move the cursor **down** the computer screen.

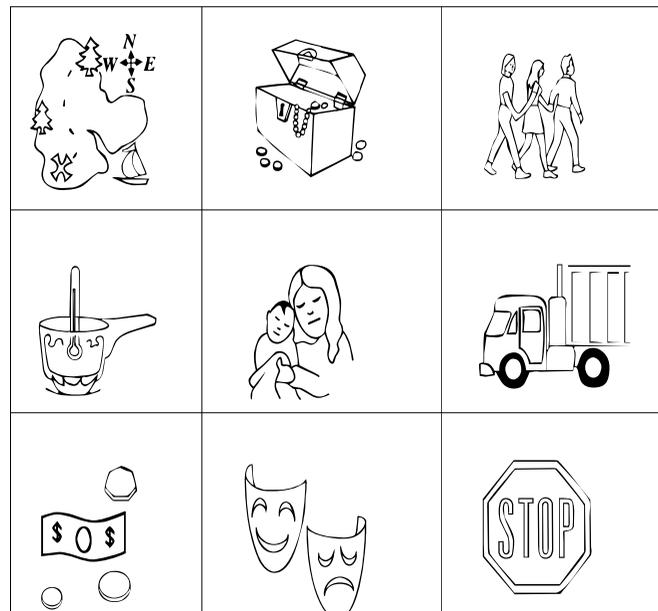
Icons to the *right* of  (e.g., , ) move the cursor to the **right** on the computer screen.

Icons *above*  (e.g., , ) move the cursor **up** the computer screen.

Icons to the *left* of  (e.g.,  , ) move the cursor to the **left** of the computer screen.

Icons that are *diagonal* to  (e.g.,  ,  , ) move the cursor **diagonally** across the computer screen.

 The **further away** a key is from the center  key, the **larger the step** the mouse will move.



Mouse Regional Grid

Using the Regional Grid

The Regional Grid is the smaller square on your Computer/Mouse overlay. The Regional Grid moves the mouse cursor to specific locations on the computer screen. The corners of the grid should be at these locations on top of your Unity overlay: J5, L5, J7, L7.

➡ You must have **Computer On** and be in **Computer Mode** to use this overlay.

The Regional Grid keys are outlined in **purple**. Each key represents a location on your computer screen. For example, The  icon is at the *center* of the grid. This key moves the mouse cursor to the **center** of your computer screen. The Regional Grid does not move the mouse step-by-step. When you activate a key on this grid, the cursor moves to a pre-set location on the computer screen.

If the keys in the Regional Grid do not move the mouse to the locations you expect them to, select the   icons. This sequence should reset the mouse. Try moving the cursor again after you have activated this sequence.

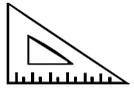
Re-setting the T-TAM

If the T-TAM receives too much information at any one time, it may "freeze." For example, if you move the computer's mouse and use the Pathfinder to move the mouse at the same time, the T-TAM will freeze. Resetting the T-TAM will restart the mouse. To re-set the T-TAM,

activate    icons. The T-TAM will beep and should resume working normally.

Control the IBM Mouse Buttons

There are five locations on your overlay that correspond to the IBM mouse buttons. These buttons are outlined in red and are at locations F5, M4, N5, N6 and I8.

	<p>REMEMBER = "click" (press and release) the IBM Left mouse button.</p> <p>"Clicking" selects object on the screen after the mouse cursor has been placed on them.</p>
	<p>THUMBS DOWN = "button down" (press down the mouse button and keep it down).</p> <p>"Button down" allows you to "drag" objects on the screen.</p>
	<p>THUMBS UP = "button up" (release the mouse from the "button down" state).</p> <p>Select "button up" after you have completed dragging a screen object.</p> <p>The "button up" location is also used to exit from MENU Theme.</p>
	<p>TRIANGLE= "click" (press and release) the IBM Right mouse button.</p> <p>The outcome of entering a Right button Click depends on the software application.</p>
	<p>MEDICAL = "double click."</p> <p>Double clicking is used to launch programs or to open and display the contents of disks and folders.</p>

Control the Macintosh Mouse Button

There are four locations on your overlay that correspond to the Macintosh mouse button. These buttons are outlined in red and are at locations F5, M4, N5, N6.

	<p>REMEMBER = "click" (press and release) the mouse button. "Clicking" is used to select screen objects after the mouse cursor has been placed on them.</p>
	<p>THUMBS DOWN = "button down" (press down the mouse button and keep it down). "Button down" allows you to "drag" objects on the screen.</p>
	<p>THUMBS UP = "button up" releases the mouse from button down state. Select button up after you have completed dragging a screen object. The button up location is also used to exit from MENU Theme.</p>
	<p>MEDICAL = "double click." Double clicking is used either to launch programs or to open and display the contents of disks and folders.</p>

The Mouse/Computer Overlay Menu Bar

➡ You must have **Computer On** and be in **Computer Mode** to use this overlay.

The Menu Bar consists of 8 keys in the middle of the top row on the Mouse/Computer overlay. The keys are outlined in **gray**. These keys correspond to the menus in the menu bar on your computer application.

For example, if you select the first key on the left in the Menu Bar, **NO**, the Pathfinder will say, "Open first menu" and the menu on the far left of the menu bar on your computer application will open. This will probably be the "File" menu for an IBM application. If you activate the next key in the Menu Bar, , the Pathfinder will say, "Open second menu" and the next menu in your application will open.

When you select a key on the Menu Bar, the mouse cursor moves to the corresponding menu on the computer screen and opens it. The mouse button is held down automatically and the first item in the menu is highlighted.

Use the keys in the Small Movement Grid to move the highlight to the menu item you want to use. When the item you want is highlighted, activate the  icon. This makes your selection and releases the mouse button.

If You Open the Wrong Menu

Press another key in the Menu Bar on your Mouse/Computer overlay to move to the next menu on your computer screen.

You can also use the Small Movement Grid keys directly to the left and right of the  icon to move to another menu on the computer screen. If the menu you want doesn't open, use the + or – keys to nudge the cursor in the direction of the menu you want. The + key is at location B5,  and the – key is at location B6, .

Transfer Notebooks to a Computer

You can save your Pathfinder Notebooks onto a computer disk or transfer text files from your computer to a Pathfinder Notebook using the Memory Transfer Interface (MTI), a secure digital card or a USB port memory device. You can open the Notebook on your computer and use a word processing application to add to/edit text in your Notebook, if you wish. When you reload the Notebook into your Pathfinder, the Notebook will contain whatever changes you made to it on the computer.

Instructions for transferring Notebooks to and from a computer are in the *MTI Manual* that came with your Pathfinder.

About Modifying or Creating Computer Commands

You can add new computer commands to your overlays or modify already stored commands. You can store commands under icon sequences or assign them to specific keys just as you learned in the Storing and Assign Key sections of the Basic Tools manual. If you are rusty about these procedures, please review these chapters before you begin storing or assigning computer commands.

To add or modify a computer command, you must know the correct code to enter for the computer command you want to use. **Appendix J** lists all the command codes for both IBM and Macintosh computer keys. You must use these codes **exactly as they are written** or your emulation device or program will not be able to translate the commands and send them to the computer.

You can change already defined commands by going to the Toolbox and opening the ASSIGN KEY menu. Activate the key whose assignment you want to change. Activate the option that contains the assignment you want to change. Make your changes.

➡ Some commands will be assigned in all three modes, some in only one or two. You must make your changes in each mode where the command is stored. If you are assigning a new command to a key, you must select which modes you want to assign the command to.

If there are no keys available, store commands under icon sequences.

Storing Mouse Commands

If you want to store or assign new mouse commands, you will need to insert a tool that tells the computer what kind of mouse movement you want to make and how to make it. The tools are called <MOUSE MOVE> and <MOUSE SET>.

About <MOUSE MOVE> and <MOUSE SET>

MOUSE MOVE tells the computer to move the mouse in little steps or large steps. These movements will be similar to the movements you make with the Small Movement Grid. These are step-by-step movements.

Once you select MOUSE MOVE as the tool that you want, you see a menu that lists many different kinds of movements such as, "up up left" or "SM right" (SM=small movement), etc.

MOUSE SET tells the computer exactly where you want the mouse cursor to go. These movements will be similar to the movements you make with the Regional Grid. These movements result in the cursor going straight to a specific location.

Once you select MOUSE SET as the tool you want you will see a menu that lists different mouse locations, such as "Middle Right" or "Lower Left".

To Store a Mouse Movement Command Under a Sequence:

Go to the Toolbox and activate STORE CORE.

Select the sequence you want to use.

See *Spell text for message* display.

Activate INSERT TOOL.

Type "m" and then activate More Items until you see <MOUSE MOVE> or <MOUSE SET>. Select the one you want.

Select the movement instruction you want from the list.

Activate OK three times to exit the menu.

Using the SERIAL MARKER Tool when you Write Commands to be sent to the Computer

The <SERIAL MARKER> tool is used when you want the Pathfinder to send a command out the serial port without having any text associated with the command sent to the computer, too . Use the <SERIAL MARKER> tool when you store computer access commands.

For example, let's look at the command for *Mouse Button Down*. This command is used for both Macintosh and PC computers and is on your Mouse/Computer overlay.

The command for "Mouse Button Down" is:

```
<CLEAR-DISPLAY><SERIAL-OFF>Mouse button down<SERIAL-ON><SERIAL-MARKER>←,moulock.
```

In this command you want the text, "Mouse button down" to be displayed on the Pathfinder's screen, but you don't want the text to go to the computer. You just want the command itself (←,moulock.) to go to the computer. We added <SERIAL-MARKER> in front of the mouse command. This tells the Pathfinder that only the **next** instruction is to go to the computer.

In this macro, <CLEAR DISPLAY> clears the Pathfinder's display. <SERIAL OFF> turns the serial output off so that nothing can be sent to the computer. "Mouse button down" is the text you type into the command that will appear on the Pathfinder display. This lets you know you have activated the correct command. <SERIAL-ON> turns the serial port back on so that what comes next is sent to the computer. ←,moulock is the computer command that tells the computer to hold down the mouse button when this key is activated.

➡ Remember to use **INSERT TOOL** when storing or assigning any tools to keys or sequences.

⬇ **Special Storing Note**

If you are using both a Mac and an IBM and they require separate commands for the same function (e.g., "backspace" on an IBM and "Delete" on the Mac do the same thing but need different commands): you can store your computer commands under a single icon sequence by including the tool: <IBM MARKER> plus the function command and <MAC MARKER> plus the function command. E.g., <IBM MARKER>←backspace. And <MAC MARKER>←delete.

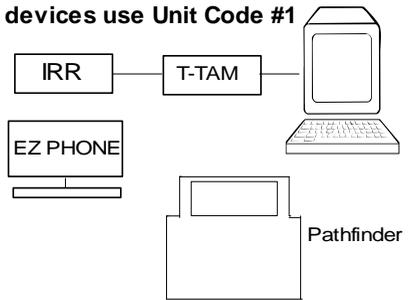
➡ **If the mouse cursor is not going where you want it to:**

If you have stored all your commands correctly, but your mouse is not pointing where it is supposed to, recalibrate the mouse.

1. Go to the Toolbox and open the USER AREA menu.
2. Activate the *Computer Access* option
3. Activate *More Items* and then activate the *Calibrate Mouse* option.
4. Use the options on the screen to move the mouse cursor from the top left corner of the computer display to the bottom right corner.
See page 202 in the *Basic Tools* manual for more information.

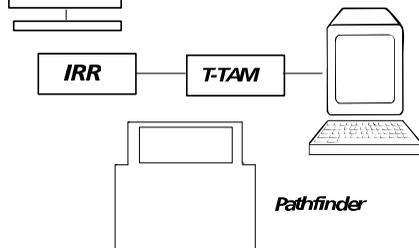
➡ Remember to back up the Pathfinder vocabulary when you have created or modified any computer commands. See the *MTI Manual* for instructions on saving your vocabulary on a computer disk.

All devices use Unit Code #1

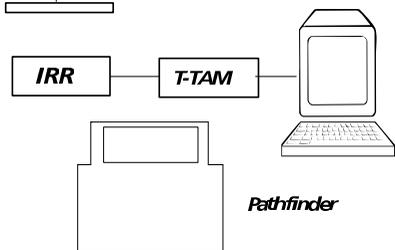


**Only you and your own equipment
in the room**

***EZ PHONE* All devices use Unit Code #1**



***EZ PHONE* All devices use Unit Code #2**



***You plus other people in the room
each with their own equipment***

CONNECTING TO AND USING OTHER DEVICES

Infrared Troubleshooting:

About One Person Using a Pathfinder, an EZ Phone and an IRR, or Two or More People Each Using a Pathfinder, an EZ Phone and an IRR at the Same Time

The chances are that you will be the only person using your Pathfinder with an EZ Phone or a computer and the IRR. However, there may be situations, such as a lab or therapy facility, where there may be two or more Pathfinders, EZ Phones, IRRs and computers all in the same room, receiving the same signals at the same time.

If you are in a situation where multiple devices are in use, you have to tell your Pathfinder which devices it is going to talk to. You do this by assigning the *same unit number* to your Pathfinder, EZ Phone and IRR.

The EXTENDED IR SETUP MENU allows you to set unit codes for your Pathfinder and its devices. If you are the only person using your Pathfinder with other IR devices, everything in this menu defaults to "1" which is just fine for you. If you are in a multiple device situation, you and the other people using Pathfinders must decide which Pathfinder will talk to which devices and assign the correct Unit Number to each device. For example, you might assign Unit Number 1 to your Pathfinder, EZ Phone and IRR, while your neighbor gets to use Unit Number 2 for her Pathfinder, EZ Phone and IRR.

➡ When you assign a Unit Number, your Pathfinder and all the devices that it will be sending signals to **must have the same Unit Number**.

To Open the EXTENDED IR SETUP Menu

Go to the Pathfinder Toolbox.

Activate the CTRL key.

Open the IR SETUP menu.

The EXTENDED IR SETUP menu is on the display.

Infrared Troubleshooting:

The EXTENDED IR SETUP MENU

To open the EXTENDED IR SETUP MENU:

In the Pathfinder Toolbox:

Activate the CTRL key.

Activate the IR SETUP menu

You should see the EXTENDED IR SETUP menu on the display.

Pathfinder Unit Number = >1<

The default is Number 1. In multiple device situations, you can choose to be Unit 1, 2, 3 or 4.

EZ Phone Unit Number = >1<

The default is Number 1. In multiple device situations, you can choose to be Unit 1, 2, 3 or 4.

EZ Phone Baud = >1200<

The default is 1200. You can change to 300 if necessary.

IR Unit Number = >1<

The default is Number 1. In multiple device situations, you can choose to be Unit 1 or 2.

IR Receiver Protocol = >PACKET<

The default is PACKET protocol. You can choose PIPELINE protocol, if necessary. See the next page for protocol information.

 **Remember:** When you assign a Unit Number, your Pathfinder and all the devices that the Pathfinder will be sending signals to **must have the same Unit Number.**

Infrared Troubleshooting:

About the Protocol Options

There is an option in the IR ADDRESS MENU that allows you to choose the kind of protocol you want an Infrared Receiver (IRR) to use to receive signals from the Pathfinder. The protocol choices are PACKET or PIPELINE.

PACKET PROTOCOL allows you to have more than one Pathfinder and IRR in the room, with all of them receiving the same signals at the same time. Packet protocol allows you to assign a Unit Number to each device. Packet protocol also checks for errors in the infrared communication and screens out infrared information from outside sources. This provides for more accurate infrared communication. **1200 baud must be used with this protocol.**

PIPELINE PROTOCOL does not check for errors in the infrared information it receives. It does not allow you to assign Unit Numbers for more than one infrared device. It does not screen out infrared information from outside sources. This means that accurate infrared information may be difficult to achieve in some situations. You can use either 1200 or 300 baud with this protocol. **Character Pacing must be used with this protocol.**

Note:

If you are using the Pathfinder with an older T-TAM, a computer and an IRR, set the Protocol option to PIPELINE and use 300 baud. You must use Character Pacing with this protocol. If you have a T-TAM with a 300/1200 baud switch on it you can use 1200 baud and PACKET protocol. (If you want to update your T-TAM to support 1200 baud, call the PRC Service Department.)

Infrared Troubleshooting:

If You are Using an IRR and You Get an Error Message on the Pathfinder

If the IRR doesn't receive the infrared signals you send from the Pathfinder, the Pathfinder display will show the message, "Remote IR device is not responding. Please wait or activate the Text Display area to cancel."

Make sure the Pathfinder's IR window is *facing* the infrared window on the IRR. Check to make sure nothing is blocking this line-of-sight between the Pathfinder and the IRR. If something is in the way, remove it and the signal should go through.

The infrared signal that the Pathfinder sends is very strong. If the Pathfinder and IRR windows are *closer than* 18 inches to each other and are *directly facing* each other, the IRR may not be able to read the Pathfinder's signal. Either move the Pathfinder farther away from the IRR or set the Pathfinder so that its IR window is at an angle to the IRR. The signal will go through but it will not overpower the IRR.

When you use the Pathfinder with a computer and an IRR, you set (among other things) the "Serial Output" option to On and the "Send Output " option to IR in the Pathfinder's OUTPUT MENU.

If you use your Pathfinder with these settings when the IRR is not available (in another room or blocked in some way), you will get an error message that says the Pathfinder is busy sending IR data. Either go where the IRR is or check to make sure the IRR is not blocked. If you don't want to send signals at all, go to the OUTPUT MENU and turn the Serial Output to Off.

Appendices

APPENDICES

Appendix A: All Tools List

Summary:

When you activate INSERT TOOL during the storing procedure, the Pathfinder shows you the screens that contain all the tools that you can assign to a key or store under an icon sequence. The tools are listed alphabetically. Explanations of the tools follow the list.

Activate Key	Disable Headpointer
Activity Menu	Down
Assign Key Menu	Ear Volume Down
Auditory Prompt Menu	Ear Volume Up
Auditory Prompts Off	Edit Core
Auditory Prompts On	Edit Menu
Auditory Prompts On/Off	Edit Mode
Backlight Intensity Down	End
Backlight Intensity Up	Erase Core
Beep Off	Exit Theme
Beep On	Feedback Menu
Beep On/Off	Find/Replace
Block Marker	GoTo Computer Mode
Calculator	GoTo Minspeak
Call	GoTo Spell
Cancel	Hide/Show Notebook
Caps Lock	Home
Caps Off	IBM Marker
Caps On	Icon
Choose Activity	Insert Tool
Clear Display	IR Command
Close Notebook	IR Setup Menu
Close Toolbox	Left
Copy Block	MAC Marker
Ctrl	Maintenance Menu
Cut Block	Minsert
Date Display	More Items
Delete Character	Mouse Button
Delete Icon	Mouse Move
Delete Last Selection	Mouse Set
Delete Word	Notebook Menu
	OK

Open Notebook
Open Toolbox
Output Menu
Page Down
Page Up
Paste Block
Pick 1 Icon Theme
Pick 2 Icon Theme
Plural
Power Off
Reset Default
Review Vocabulary Menu
Right
Save Changes
Save Notebook
Search/Replace
Selection Technique Menu
Serial Marker
Serial Off
Serial On
Serial On/Off
Set 1 icon theme
Set 2 icon theme
Set Activity
Settings 1
Settings 2
Settings 3
Settings Menu
Shift
Sing
Speak All
Speak Date
Speak Display
Speak Last Selection
Speak Next Sentence
Speak Next Word
Speak Notebook
Speak Sentence
Speak Time
Speak Word
Speaker Volume Down
Speaker Volume Up
Speech Marker

Speech Menu
Speech Off
Speech On
Speech On/Off
Spell/Minspeak
Start Scan
Store Core
System Function Menu
Text Marker
Text/Speech Marker
Themes Menu
Transfer Memory Menu
Up
User Area Menu
Voice
Wait Any Key or Switch
Word Prediction Menu

**Tools that can be used with
the CTRL Tool**

CTRL Any Speak Function
CTRL Block Mark
CTRL Edit Mode
CTRL Serial Marker
CTRL Serial On
CTRL Serial Off
CTRL Speech Off
CTRL Speech On

APPENDIX A: ALL TOOLS LIST

Pathfinder Manual: Power Tools

Explanations of the Tools in the All Tools List

ACTIVATE KEY

Use this tool to tell the Pathfinder that you want to activate a particular key as part of your macro.

ACTIVITY MENU

Allows you to assign this menu to a key or sequence on your overlay.

ASSIGN KEY MENU

Allows you to assign a tool or tools and text to a core vocabulary key on your communication overlay. You can also swap keys, hide/show keys, assign tools and/or text to Spell, Computer or Minspeak modes with this tool.

AUDITORY PROMPT MENU

Assign the AUDITORY PROMPTS MENU to a key or icon sequence.

AUDITORY PROMPTS OFF

AUDITORY PROMPTS ON

AUDITORY PROMPTS ON/OFF

Turns auditory prompts Off or On or toggles between the two actions.

BACKLIGHT INTENSITY DOWN

BACKLIGHT INTENSITY UP

Turns the display backlighting up or down.

BEEP OFF

BEEP ON

BEEP ON/OFF

Turns the feedback beep on or off or toggles between the two actions.

BLOCK MARKER

Allows you to highlight a block of text.

CALCULATOR

Allows you to store the calculator to a key or sequence.

CALL

When activated, this tool emits a series of tones that will alert people that you need something immediately.

CANCEL

Allows you to cancel an action. You would most likely use this when you are navigating through menus.

CAPS LOCK

Allows you to type using all capital letters. Activate it again to return to lowercase letters. When CAPS LOCK is On, the LED lights next to the picture of the padlock on the upper right front part of the Pathfinder case.

CAPS OFF

Activate to switch to lower case letters.

CAPS ON

Activate to type with all capital letters.

CHOOSE ACTIVITY

Allows you to select an activity from the Activity Row.

CLEAR DISPLAY

Removes all text and prompts from the display and text buffer.

CLOSE NOTEBOOK

Allows you to close an open Notebook from your overlay.

CLOSE TOOLBOX

Allows you to close the Toolbox with a macro.

CONTROL (CTRL)

Activating this key can change what the next key that you activate does. The behavior of some keys will be altered, or the next character typed will generate a "control character" which can be sent to a computer, for example. *See the CTRL commands at the end of this list.*

COPY

Allows you to copy text in one application and paste it into another application. For example, if you have created some text in the regular Workspace that you decide is something that you would like to save in a Notebook, you can highlight the text using BLOCK MARK and copy it to a Notebook.

CUT

Allows you to cut text from a document and paste it somewhere else.

DELETE CHAR

DELETE CHARACTER removes the character to the *left* of the cursor.

DELETE ICON

This tool deletes the last icon that you selected. You can select a new icon or re-select the deleted one if you want.

DELETE LAST SELECT

DELETE LAST SELECTION removes any text that you brought up on the display when you activated your last (previous) selection. If the previous selection was a tool, DELETE LAST SELECTION does nothing.

DELETE WORD

This tool removes the word or group of letters to the *left* of the cursor up to the next space or punctuation mark. If the character to the left of the cursor is a space, DELETE WORD removes the space.

DISABLE HEADPOINTER

Activate this tool to disable your headpointer. When the headpointer is disabled you will see a box on the Pathfinder screen. When you are ready to re-enable the headpointer, click OK in the box. When the headpointer is disabled you will only be able to activate OK in the box. The headpointer will not activate any other keys.

DOWN

Moves the cursor down one line, one screen, to the end of the workspace, depending on the EDIT MODE setting.

EAR VOLUME DOWN**EAR VOLUME UP**

Turns the earphone volume up or down.

EDIT CORE

Allows you to edit core vocabulary sequences.

EDIT MENU

Allows you to cut, copy edit and replace text from your overlay.

EDIT MODE

Allows you to move through text by sentence, word, or character.

END

Moves the cursor to the end of the current line.

ERASE CORE

Erases sequences stored in your core vocabulary.

EXIT THEME

Allows you to exit a theme from your overlay. Activate once to exit for one sequence; activate twice to permanently exit theme.

FEEDBACK MENU

Allows you to change the feedback the Pathfinder gives you.

FIND/REPLACE

Allows you to use the FIND/REPLACE function from the EDIT MENU.

GO TO COMPUTER MODE

Allows you to go from the mode you are currently using to Computer mode.

GO TO MINSPEAK

Use this tool to move from the mode you are currently using to Minspeak mode.

GO TO SPELL

This takes you from the mode you are currently using to Spell mode.

HIDE/SHOW NOTEBOOK

This allows you to hide the Notebook you are working in and to retrieve it later.

HOME

Moves the cursor to the beginning of the current line.

IBM MARKER

Use this tool in conjunction with the MAC MARKER tool. Perhaps you use an IBM at work and a Mac at home. Often a Mac and an IBM have a key that does the same thing but it is called something different on each computer (e.g. Mac <DELETE> command or IBM <BACKSPACE> command). When you store computer emulation commands, you can store INSERT TOOL, IBM MARKER, and the specific IBM key command; then add INSERT TOOL, MAC MARKER and the specific Mac key command. Store both these commands under the same icon sequence. When you activate this sequence, the Pathfinder will select the correct command for the computer you are using, (Select the computer you are going to use for computer access in the *Computer Access Menu* of the USER AREA MENU.)

ICON

Places a selected icon into the icon buffer.

INSERT TOOL

Allows you to store tools or text and tools under icon sequences or assign them to keys. Activate this tool before each tool that you want to store. Then activate the tool you want to store.

IR COMMAND

Use this tool when you are storing remote control commands.

IR SETUP MENU

Allows you to store infrared commands for remote controls.

LEFT

Moves the cursor to the left one character, word or sentence, depending on the setting of EDIT MODE.

MAC MARKER

See IBM MARKER.

MAINTENANCE MENU

This menu allows you to load software, erase the Pathfinder, lock the system, set the time and date, set backlight shut-off , etc.

MINSERT

Allows you to put blanks in a message that you can fill when you speak the message.

MORE ITEMS

This allows you to access more items in a menu or activity.

MOUSE BUTTON

Use this with keyboard mouse emulation commands

MOUSE MOVE

This allows you to store mouse movements from a list of movements which are relative to your current mouse position, e.g., large movement, very large movement, small movement, etc. The mouse moves in increments.

MOUSE SET

This allows you to store mouse movements from a list of specific movements, e.g., upper left corner, bottom right corner, middle top, etc. The mouse moves to a specific location.

NOTEBOOK MENU

Allows you to place this menu on your overlay.

OK

This is used in creating macros that navigate the menus. This tells the Pathfinder to save what you have done and return to the previous page. The OK key also acts as a "repeat" key in Minspeak mode. After you have retrieved an icon sequence, you can activate OK to repeat the sequence.

OPEN NOTEBOOK

Allows you to open a specific Notebook from your overlay.

OPEN TOOLBOX

Allows you to open the Toolbox from your overlay.

OUTPUT MENU

This menu allows you to set up the Pathfinder so that it will work with a computer or printer, remote control or memory transfer.

PASTE

Allows you to paste cut or copied text into a new place.

PAGE DOWN

Moves the text on the display down a page.

PAGE UP

Moves the text on the display up a page.

PICK 1 ICON THEME

Switches you to a 1 icon theme and allows you to select the theme icon.

PICK 2 ICON THEME

Switches you to a 2 icon theme and allows you to select the first two icons.

PLURAL

When activated, the word to the left of the cursor is made plural.

POWER OFF

When this tool is activated the Pathfinder 'goes to sleep.' Activate a key or switch to wake it back up.

RESET DEFAULT

This resets all the Pathfinder defaults.

REVIEW VOCABULARY MENU

Allows you to review all the vocabulary in the Pathfinder. You can print it out or see it on the display.

RIGHT

Moves the cursor right one character, word or sentence depending on the setting of EDIT MODE.

SAVE CHANGES

Normally, when you turn the Pathfinder off, you see "Saving changes..." on the screen. This tool allows you to save changes without turning the Pathfinder off. You might want to store this tool if you are doing a lot of programming and want to periodically save your work.

SAVE NOTEBOOK

Allows you to save the current Notebook from your overlay.

SELECTION TECHNIQUE MENU

Choose a selection technique and the options for it that you want from this menu.

SERIAL MARKER

Any text that follows a SERIAL MARKER is sent out the serial port but not displayed or spoken.

SERIAL OFF

Turns the serial output Off.

SERIAL ON

Sets the serial output to its last active setting, either Immediate or Delayed. Text is automatically sent out the serial port when this is turned On.

SERIAL ON/OFF

Toggles between Serial On and Serial Off.

SET 1 ICON THEME

Switches you to a 1 icon theme you stored previously.

SET 2 ICON THEME

Switches you to a 2 icon theme you stored previously.

SET ACTIVITY

Allows you to go to a specific activity. Use the arrow keys and OK key on your overlay to navigate through your activities if you don't want to use the display screen.

SETTINGS 1**SETTINGS 2****SETTINGS 3**

Allows you to store and then access 3 different groups of settings.

SETTINGS MENU

Allows you to save settings and change between settings without navigating each of the menus. Use this with SETTINGS 1, 2 and 3 below.

SHIFT

When this is set, the next character you activate will be an UPPERCASE letter. The second character you activate will be in lowercase. When you activate SHIFT, the "Shift" LED flashes on the upper right front of the Pathfinder case.

SING

This tool shows you a list of all the songs in your Pathfinder and allows you to pick a song.

SPEAK ALL

When this tool is activated, the Pathfinder speaks all of the text in the text area of the display and in the buffer. (When you type, letters and words will move off the screen in order to make room for new letters and words. Words that are no longer on the screen have moved to the workspace. You can use the arrow keys to bring them back onto the display screen.) Clearing the display (CLEAR DISPLAY tool) or turning the device Off clears the buffer. This tool works whether speech is On or Off.

SPEAK DATE

When you store this tool and then activate it, the Pathfinder will speak the current date.

SPEAK DISPLAY

When this tool is activated, the Pathfinder speaks everything that is visible in the text display area. This tool works whether speech is On or Off.

SPEAK LAST SELECTION

When you activate this tool, the Pathfinder speaks the last stored message you activated or the last spelling characters you put on the display. This is helpful if you have to repeat yourself so that someone listening can understand you better, or to get someone's attention. This tool works whether speech is On or Off.

SPEAK NEXT SENTENCE

For use with Notebooks. If you want to speak a Notebook sentence by sentence, use this tool. Activate it each time you are ready to move to the next sentence.

SPEAK NEXT WORD

For use with Notebooks. If you want to speak a Notebook word by word, use this tool. Activate it each time you are ready to go on to the next word.

SPEAK NOTEBOOK

Tells the Pathfinder to speak the Notebook you stored with the tool.

SPEAK SENTENCE

When you activate this key, the Pathfinder speaks the message that contains the cursor. This is helpful if you want to hear how something you are working on sounds before you store it. It is also useful if you are going to give a speech or presentation. People seem to understand DECTalk Access32 speech better when they hear it one sentence at a time until they are used to listening to it. This tool works whether speech is On or Off.

SPEAK TIME

When you store this tool and then activate it, the Pathfinder will speak the current time.

SPEAK WORD

When this tool is activated, the Pathfinder speaks the last word you typed on your spelling overlay, or the last word you brought up in Minspeak mode. If you are typing in Spell mode, you can turn speech OFF (so you don't have to listen to the Pathfinder speak each letter) and type the word. Then you can activate this key and the word you typed will be spoken. See also the FEEDBACK menu, *Speak When Spelling*.

SPEAKER VOLUME DOWN**SPEAKER VOLUME UP**

Turns the speaking volume up or down.

SPEECH MARKER

This marks the beginning of text in a sequence that is to be spoken but not displayed.

SPEECH MENU

This allows you to insert the SPEECH MENU in a macro.

SPEECH OFF**SPEECH ON****SPEECH ON/OFF**

When this tool is On, all the sequences you select or letters you type are automatically spoken. When this tool is Off, nothing is spoken unless you activate one of the SPEAK tools. SPEECH ON/OFF toggles between the two actions. (If *Speak When Spelling* is On in the FEEDBACK menu, the Pathfinder will speak regardless of where this tool is set.)

SPELL/MINSPEAK

Toggles between Spell mode and Minspeak mode.

START SCAN

Add this to a macro to force the Pathfinder to start scanning each time, regardless of how long a switch is held down.

STORE CORE

Allows you to store core vocabulary messages under icon sequences.

SYSTEM FUNCTION MENU

This single menu gives you access to all other menus. With this menu, you do not have to go to the Toolbox to access menus, nor do you have to store each individual menu in an icon sequence or on your overlay.

TEXT MARKER

This marks the beginning of text in a sequence that is to be displayed but not spoken.

TEXT AND SPEECH MARKER

This marks the end of the text in a sequence where a SPEECH MARKER and/or TEXT MARKER has been used. Any text after the TEXT AND SPEECH MARKER will be both displayed and spoken.

THEMES MENU

Allows you to have this menu on your overlay.

TRANSFER MEMORY MENU

This allows you to save the Pathfinder's memory to a computer disk, transfer memory from one Pathfinder to another and import graphics, and Save/Load Notebooks to and from a computer. (See the *MTI Manual* for more information.)

UP

Moves the cursor up one line, paragraph, to the end of the workspace, depending on how EDIT MODE is set.

USER AREA MENU

Allow you to select user areas and overlays.

VOICE

Allows you to use different voices in a message, without having to store the whole SPEECH menu in a macro. This gives you only the voice options from the menu.

WAIT ANY KEY OR SWITCH

Causes a pause in a macro until a key is activated.

WORD PREDICTION MENU

This menu allows you to turn Word Prediction On and Off, add words to the word prediction dictionary, delete words, etc.

Tools that can be used with the CTRL command:**CTRL EDIT MODE**

Clears the current edit mode.

CTRL BLOCK MARK

Clears the current block marker.

CTRL SERIAL MARKER

This tells the Pathfinder to send data out the serial port only if the Serial option is turned On.

CTRL SERIAL ON

Turns the serial output back on in whatever the last serial mode was, for the remainder of the macro in which it is found.

CTRL SERIAL OFF

Turns the serial output back off in whatever the last active serial mode was, for the remainder of the macro in which this is found.

CTRL SPEAK (ADD ANY SPEECH FUNCTION HERE)

Performs any regular speech function (SPEAK ALL, SPEAK DISPLAY, SPEAK NOTEBOOK, etc.) only if speech is turned on.

CTRL SPEECH ON

Turns speech on for the remainder of the macro in which it is found.

CTRL SPEECH OFF

Turns the speech off for the remainder of the macro in which this is found.

CTRL START-SCAN

This only starts scanning if *Scan Auto Restart* is set to ON (in the SELECTION TECHNIQUE MENU)

Appendix B: About Data Logging and Language Activity Monitoring Using the LAM

A significant milestone in the field of augmentative and alternative communication (AAC) is the development of the notion of language activity monitoring. LAM is the intentional monitoring of the language activity of people who rely on AAC systems. LAM has implications in three primary areas of AAC: clinical intervention, outcomes measurement, and research. (Romich and Hill, 1999)

LAM is being implemented in high performance AAC systems. (For older AAC systems, an external LAM device, available from PRC, can be connected to the serial port.) The LAM records each language event (one or more letters or words) and adds a time stamp (24-hour format with a resolution of one second). This data provides a record of what was said and when it was said. Time information allows determination of the language representation method(s) being used and the communication rate being achieved.

The LAM data can be uploaded periodically to a computer for editing and analysis. The use of a standardized reporting protocol provides for universal compatibility with the computer-based tools. (Hill and Romich, 1999)

The practice of any discipline can be either an art or a science. Science requires data. LAM data is changing AAC from an art to a science.

References

Romich, B. and Hill, K., "A Language Activity Monitor for AAC and Writing Systems: Clinical Intervention, Outcomes Measurement, and Research", *Proceedings of RESNA '99*, pp. 19-21, 1999.

Hill, K., and Romich, B., "A Proposed Standard for AAC and Writing System Data Logging for Clinical Intervention, Outcomes Measurement, and Research", *Proceedings of RESNA '99*, pp. 22-24, 1999.

Instructions for Using the LAM

For the instruction on the following pages you will need: an IBM PC or clone running Windows 95 or 98 with the LAM Terminal program; a Pathfinder with LAM software installed, and a null modem cable to connect the communication device to the computer.

➡ The LAM Terminal Program is on a floppy disk in an envelope at the back of the LAM *Procedural Manual*.

These LAM instructions will teach you to:

- Setup the LAM terminal program on your Windows Desktop
- Setup the Pathfinder for the upload
- Perform a LAM upload so that you can do it easily at any time.

⤴ Before You Begin:

In order to accumulate language data to be analyzed, you must turn *Data Logging On* in the REVIEW VOCABULARY MENU **prior** to the time you want to analyze the data. The LAM software will begin to record all language activity data from the time it is turned On. You will upload this data to a computer running the LAM Terminal program at a later date.

To check if there is any data to be transferred and analyzed, activate the STATUS key on the left front of the Pathfinder. Check the *Data in Log* line. If it says *Data Logging = xx bytes*, there is information you can upload. If it says *Data Logging = OFF 0 bytes* there is no information to be uploaded. You must turn *Data Logging On* (in the REVIEW VOCABULARY MENU) and wait to perform an upload until the Pathfinder has been used enough to accumulate language data.

Set Up Instructions

On both the Computer and the Pathfinder

1. Connect your computer and the Pathfinder with a null modem serial cable. You can use the MTI cable that came with your Pathfinder.
2. Plug one end of the cable into COM 1 on your computer.
3. Plug the other end of the cable into the serial port on the Pathfinder. The serial port is on the top of the case and has a picture of a computer above it. If your computer has more than one port, and COM 1 is being used for something else, plug the cable into another port.

On the Computer

 There is a floppy disk in an envelope at the back of the *LAM Procedural Manual*.

1. Remove the disk from the envelope and put it in the floppy drive on your computer.
2. On your computer, go to the drive where you put the floppy disk and open the disk.
3. Click on and drag the **Lamterm.exe** icon to your desktop.
4. Double click on the **Lamterm.exe** icon on your desktop.
5. You see the **Lamterm** screen.

The **Status** box indicates the baud rate and the computer COM port that are currently selected. Initially these are set to the factory defaults, using COM port 1 and a 9600 baud rate.

If you want to change COM ports or baud rates:

Click on the *Options* menu.

Click on *Port Settings*.

Click in the box labeled *Use Defaults*. This removes the check mark in the box.

Click on the *Port* and/or the *Baud* rate you want to use. (Make sure the LAM box is connected to the port you have selected.)

Click on *OK*.

On the Pathfinder

1. Open the Toolbox.
2. Open the OUTPUT menu.
 - Set *Baud Rate* to **9600**. The OUTPUT menu baud rate and the *Lamterm* baud rate must be the same.
 - Set *Serial* to *On*.
 - Set *Auto Line Feed* to *On*.
 - Activate *OK* to exit.

To Confirm that Everything is Properly Set Up between your Computer and the Pathfinder:

On the Pathfinder, open the REVIEW VOCABULARY MENU in the Toolbox.

Activate *Send Data Log to Computer*.

Look at the *Number of Bytes Received* line in the Lamterm **Status** box on your computer. You will see the data transferring in byte numbers.

When the data has stopped transferring:

You see a *Save As* screen on your computer.

You see a suggested format for saving the data

YYMMDD_n_ls_name

- **YYMMDD = the year, month and date;**
- n = the number of the language sample for this person on this date
- ls = the Language Sample context (2 characters)
(for example, pd=picture description; in=interview;
co=conversation; etc.)
- name = the first four letters of the person's last name.

In the ***Save In*** box at the top of the screen, select where you want to save the upload.

 The upload will be saved as a Text file (.txt). You will have to re-save the file as a Microsoft Word file or a WordPad file.

To Save the Upload file in MSW or WordPad:

1. Open Microsoft Word or WordPad.
2. Open the file you recently uploaded.
3. Save the upload again as a MSW or Word Pad file. Delete the original .txt file.

Using the LAM Upload

Follow these instructions each time you want to perform an upload.

1. Connect the Pathfinder to a computer using a null modem cable (the '95 MTI cable will work).
2. Double-click on the *Lamterm.exe* icon on your computer desktop.
3. On the Pathfinder, open the REVIEW VOCABULARY MENU in the Toolbox. Activate *Send Data Log to Computer*.

When the data has all been transferred, save it on your computer using the Lamterm *Save As* screen that appears on your computer screen

1. Name the file.
2. Select where you want the file to be saved.
3. Select **Save**.

When the file is saved:

1. Open your word processing application (MSW or WordPad).
2. Open the upload file you just saved.
3. Save it as a file in MSW or WordPad.
4. Delete the original .txt file

On the Pathfinder

1. Open the REVIEW VOCABULARY MENU in the Toolbox.
2. Activate *Clear Data Log*.
3. Activate OK to exit the menu.

 If you want to accumulate more date for a later upload, make sure *Data Logging* is *On* in the REVIEW VOCABULARY MENU.

About the LAM Data

When you look at the raw LAM data that you saved in your computer file or folder, the first thing you will see is the Time Stamp. This is the first item in the first line. The time is presented in a 24-hour format.

Then you see the SOURCE of the language event. The following SOURCE codes are currently valid: ACT (Activity Row); SEM (Semantic compaction = Minspeak); SPE (spelling); WPR (word prediction); DWP (Derivative from Word Prediction). This code is in capital letters.

The character string that follows the Source code is the language event that occurred at that time.

Any characters spaced more than 0.2 seconds apart are considered to be separate language events.

Below is an example of how the raw LAM data looks:

```
20:37:00 SEM "I need "  
20:37:05"*[VOLUME UP]*"  
20:37:06"*[VOLUME UP]*"  
20:37:07"*[VOLUME UP]*"  
20:37:14 SEM "something "  
20:37:16 SEM "to drink "  
20:37:19 SPE "i"  
20:37:20 SPE "m"  
20:37:24 SPE "m"  
20:37:28 WPR "ediately "
```

From this example you can see that whole words and phrases were accessed, in this case using the semantic compaction language representation method. The "[VOLUME UP]" event indicates that the system user is capable of identifying the need to perform that function

and can implement it. The word "immediately" was selected using spelling and word prediction. The utterance contains six words. Including the volume adjustment, the time from the first event to the last event was 28 seconds.

LAM data can be analyzed in several different ways. Using a word processor, you can paste the LAM data into a new document and save it in its raw form. Some word processors, such as Word for Windows, allow you to create a macro that can be used for some editing, such as removal of the Time Stamp. However, simply viewing the raw data can provide information about the vocabulary that is being selected and how the AAC system is being used. For example, if a particular word was introduced or practiced at a previous therapy session, a search for that word in the data can indicate how many times the word was used in later conversations.

Other performance monitoring tools soon to be available from Prentke Romich Company include an editor, language analysis program(s) and implementation programs.

See the *Procedure Manual for the LAM* for more information.

Appendix C: How to Use the *Review to Output* Option in Various Pathfinder Menus

You can review the Pathfinder vocabulary, the Word Prediction Dictionary or the Speech Dictionary by looking at the review on a computer or printing it out on a printer.

To Review to an IBM or clone Computer:

1. Connect your computer and the Pathfinder with a null modem serial cable. You can use the 95 MTI cable that came with your Pathfinder. Plug one end of the cable into COM 1 on your computer. If your computer has more than one COM port and COM 1 is being used for something else, plug the cable into another port. Plug the other end of the cable into the serial port with the computer icon on the top of the Pathfinder.
2. Select the computer *Start* menu.
 1. Select *Programs*.
 2. Select *Accessories*.
 3. Select *HyperTerminal*.
 4. In the HyperTerminal window, select *Hyperterm.exe*.
 5. In the *New Connection* dialogue box:
 - Type, "Review" as the name.
 - Select an icon.
 - Press *OK*.
 6. In the *Phone Number* dialogue box:
 - At *Connect Using*, select *COM 1*. (If you connected your cable to a different COM port select the correct port.)
 - Press *OK*.
 7. In the *COM 1 Properties* dialogue box:
 - Either select the *Defaults* option, or set the following:
 - Data Bits = 8*
 - Parity = None*

Stop Bits = 1

At ***Bits per Second***, select ***9600*** if this is not already set there.

At ***Flow Control***, select ***None***.

8. The "Review" window should now be open.
11. Open the ***Transfer*** menu in the menu bar. Select ***Capture Text***. Type in the ***drive*** and the ***file or folder*** where you want the text to go. Click on ***Start***.

On the Pathfinder

1. Open the Toolbox on the Pathfinder.
2. Open the OUTPUT menu.
 - Set ***Output Method*** to ***RS232***.
 - Set ***Output*** to ***On***.
 - Set ***Baud Rate*** = ***9600***. (The HyperTerminal and Pathfinder baud rates must be the same.)
 - Set ***Serial*** to ***On***.
 - Set ***Auto Line Feed*** to ***On***.
 - Activate ***OK*** to exit.
3. From the menu you are using in the Pathfinder, activate ***Review to Output***.

When the review has been transferred to your computer you can ***Copy*** it into a word processing program, ***Save*** it in a file or folder and then use the computer ***Print*** function to print the review.

On a Macintosh Computer

1. Connect your computer and the Pathfinder with the MTI Mac cable that came with your Pathfinder. Plug one end of the cable into either the Printer port or the Modem port of your computer, depending on what your Terminal program calls for. (Some Terminal programs allow you to connect to either port, some only allow you to connect to the modem port.)
2. Open the Terminal program on your computer.

3. Select the port that you are connected to.
4. Set the baud rate to match the Pathfinder's baud rate. (The Pathfinder baud rate is in the OUTPUT menu.)

On the Pathfinder

1. Open the OUTPUT menu.
 - Set **Output Method** to **RS232**.
 - Set **Output** to **On**.
 - Set **Baud Rate** = **9600**. (You can select a higher baud rate, but the terminal program and Pathfinder baud rates must be the same.)
 - Set **Auto Line Feed** to **On**.
 - Activate **OK** to exit.
3. From the menu you are using in the Pathfinder, activate **Review to Output..**

When the review has been transferred to your computer you can **Copy** it into a word processing program, **Save** it in a file or folder and then use the computer **Print** function to print the review.

To Print Directly to a Serial Printer

1. Attach the printer cable to the **serial port** with the picture of a computer on the top of the Pathfinder.
2. Set the printer baud rate to match the baud rate in the Pathfinder's OUTPUT menu.
3. The printer should be set for **8 Data Bits**, **2 Stop Bits** and **Parity** should be set to **None**.
4. Open the OUTPUT menu in the Pathfinder Toolbox.
 - Set **Output Method** to **RS232**.
 - Set **Output** to **On**.
 - Set **Baud Rate** = **9600**. (You can select a higher baud rate, but the printer and Pathfinder baud rates must be the same.)

Set *Output Mode* to *Immediate*.

5. Make sure the printer is on-line and ready to print.
6. From the menu you are using in the Pathfinder, activate *Review to Output*.

To Print to a Parallel Printer

If you want to print to a parallel printer, you will need a parallel-to-serial adapter. You can usually get these adapters from the place you got your printer.

1. Plug the printer cable into the adapter and plug the adapter into one of the serial ports on the top of the Pathfinder.
2. Set the baud rate on the printer to match the Pathfinder's baud rate.
3. The printer should be set for *8 Data Bits*, *2 Stop Bits* and *Parity* should be set to *None*.
4. In the Pathfinder OUTPUT Menu
Set *Output Method* to *RS232*.
Set *Output* to *On*.
Set *Baud Rate* = *9600*. (You can select a higher baud rate, but the printer and Pathfinder baud rates must be the same.)
Set *Output Mode* to *Immediate*.
5. Make sure the printer is on-line and ready to print.
6. From the menu you are using in the Pathfinder that contains the *Review to Output* option, activate *Printer*.

Appendix D: The Pre-Stored Songs in the Pathfinder

The following songs are pre-stored in the Pathfinder for your use.

Amazing Grace
Joy to the World
O Come Little Children
Silent Night
Away in a Manger
My Country 'Tis of Thee
Old MacDonald
Mary Had A Little Lamb
Humpty Dumpty
Twinkle Twinkle Little Star
London Bridge
I'm a Little Teapot
Hickory Dickory Dock
Jack and Jill

Appendix D: To Copy a Pre-Stored Song to Your Overlay

The songs on the previous page are already stored in the Pathfinder. In order to sing them, you have to move them from the Toolbox to your Minspeak overlay or into an Activity.

To Move a Song to Your Overlay:

1. Go to the Toolbox.
2. Activate STORE CORE.
3. Select the icon sequence you want to use.
4. Select "Spell text for message."
4. Activate INSERT TOOL on your Spelling overlay.
5. Activate SING.
6. Select the song you want to copy.
7. Activate OK twice.

The next few pages explain how to program songs that you want the Pathfinder to sing.

Appendix E: How to Program and Store Your Own Songs in the Pathfinder

☞ Remember: You can always record songs rather than programming them

Programming a song in DECTalk is different from programming regular text because you must tell the Pathfinder to *sing* the song, not speak it.

To do this you must type each letter of text phonetically and add time and pitch values, which correspond, to musical notes. At the end of this appendix you will find a list of PITCH and TIME values, a chart of musical notes and a list of vowel and consonant phonemes to use.

Programming songs is not difficult but it *is* time consuming, so plan accordingly.



Highly Recommended

Write down the programming of your song *before* you begin to program it into the Pathfinder.

This means writing down the words to the song in phonemes and adding the time and pitch values exactly the way you want to program them. This will save you a great deal of time when you are ready to enter the song into the device.



Helpful Hint

You will be doing quite a bit of cross-referencing with the lists at the end of this appendix. We encourage you to use the sheet music for any song you want to program. This way you can match the notes on the sheet music with the notes in the pitch and time tables. You don't have to be able to read music.

When programming a song you must change the letters in your song to phonemes (the written form of sounds). Find the sound in the Vowel and Consonant Phoneme List for each letter in your song and write down the phoneme.

Once you have entered the correct phoneme for a letter, you must tell the Pathfinder how *long* (time) to hold which *note* (pitch). The TIME and PITCH values are *always* enclosed in angle brackets < > immediately following the phoneme they represent. The TIME value *always* comes before the PITCH value inside the brackets. The two values are *always* separated by a comma, i.e., <300,24>.

You always start to program a song by activating the left square bracket [. This tells the Pathfinder that you are programming a song. Program all songs in STORE mode for DECTalk speech.

Break the Song into Phrases or Lines

Most songs, unless they are very, very short (one line) must be broken down into separate phrases or single lines to be stored. After each phrase (or line) you must activate the *right* square bracket,] and then the **CTRL** key and the "k" key on your keyboard. You will see the right bracket and two small characters beside it on your display.

The right square bracket] usually tells the Pathfinder that it has come to the end of the song. When it is combined with the **CTRLk** activation, it tells the Pathfinder to keep on singing the song until it comes to a right square bracket that is **not** followed by a CTRL k character. The] *without* a CTRL k following it signifies the end of the song.

➤ Before you Begin to Store:

Write down the song you want to store *exactly* the way you will enter it into the Pathfinder.

1. Start with the left square bracket [.
2. Use the **phoneme lists** to change each letter of the song into the correct phoneme.
3. Use the **TIME and PITCH tables** to match the note values in your song.
4. Write down the TIME and PITCH values after each phoneme.
Enclose the TIME and PITCH values in angle brackets < > and separate the two values with a comma.
5. Break the song into phrases or lines by adding a **right square bracket] at the end of the line or phrase**. Use a reminder of some kind to tell you to activate the **CTRL and "k" keys** when you are actually programming.
6. Start the next phrase or line with the left square bracket [.
7. Continue until you have completed the song.

About TIME Values

The TIME value refers to the *amount of time in milliseconds* that a note is to be held.

1,000 milliseconds = 1 second;

500 milliseconds = ½ second.

You can use the above numbers as a reference point.

You choose the amount of time you want a note to be held according to the tempo of the song. For example, a *quarter note* is held half as long as a *half note*, so you would adjust the time value for a phoneme accordingly. Use the **Note Time Value Chart** at the end of the appendix.

After you have entered a phoneme, type the left angle bracket < and then enter the TIME value (how long you want that phoneme to be held).

About PITCH Values

PITCH values correspond to notes as you see them on sheet *music* or hear them on a piano. The PITCH value of notes for the Pathfinder range from 1 to 37. 1 corresponds to C2 (or the second C below middle C on a piano). 25 corresponds to the note C4 (middle C on a piano). 37 corresponds to C5 (the first C above middle C on a piano).

The two tables, **PITCH NOTES AND VALUES** and **PITCH VALUE CODE**, at the end of the appendix will help you to figure out PITCH values.

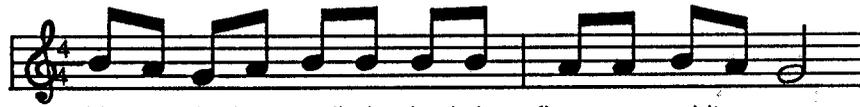
Enter the PITCH value that corresponds to the note you want after you have entered the TIME value and a comma. Then type a right angle bracket >. Do not put a space before or after the comma.

An Example of Programming a Song

Mary Had a Little Lamb



Ma - ry had a lit - tle lamb lit-tle lamb lit-tle lamb



Ma - ry had a lit-tle lamb its fleece was white as snow

#1 Change the words of the song into phonemes. Use the Vowel and Consonant Phoneme Tables to find the correct phonemes.

Mar y ha d a li t tle la mb
MER IY HXAE D AX LIH T TUHL LEYAE M

li t tle la mb li t tle la mb
LIH T TUHL LEYAE M LIH T TUHL LEYAE M

mar y ha d a li t tle la mb
MER IY HXAE D AX LIH T TUHL LEYAE M

I t s fle e ce wa s whi te a s snow
IH T S FLIY S WAX Z WAY T AE Z SNOW.

If you are new to using phonemes, it will take a little practice to become familiar with the different sounds. Sometimes a beginning consonant will blend into a vowel, but other times it may have to stand alone.

Most ending consonants will stand alone but will be held for a very short time. Use the phoneme tables at the end of the appendix.

Practice by spelling words into the Pathfinder using the phonemes you think might work. Then listen to them. Soon you will develop an idea about which phonemes are going to correspond to which sounds.

#2 Find the correct **PITCH** value in the **PITCH Values** charts.

Below is the regular notation for *Mary had a Little Lamb*.

Ma - ry had a lit - tle la mb lit - tle lamb lit - tle lamb

Ma - ry had a lit - tle lam b its fleece was white as snow



How You Can Make the Song

Sound Better:

Most songs that have notes above "37" (see the PITCH Value Code Chart) are scored too high for any Pathfinder voice to sing well. These higher songs will sound much better if you give the notes their value in an octave lower. For example, the first note in *Mary Had a Little Lamb* is B above middle C. This B has a PITCH value of 36. To assign the correct value in an octave lower, go to the PITCH Value Chart and find

the first B *below* middle C. Notice that its value is 24. Assign 24 to your B.

Also, some songs sung in a male Pathfinder voice may sound better if you program them in an octave lower than they are written.

Below, the PITCH values for *Mary had a Little Lamb* are shown an octave lower than written in the music.

The image shows two staves of musical notation in 4/4 time. The first staff contains the melody for the first line of the song, with pitch values written above the notes: 24, 22, 20, 22, 24, 22, 24, 27. The lyrics 'Ma - ry had a lit - tle lamb lit-tle lamb lit-tle lamb' are written below the staff. The second staff contains the melody for the second line, with pitch values written above the notes: 24, 22, 20, 22, 24, 22, 24, 22, 20. The lyrics 'Ma - ry had a lit-tle lamb its fleece was white as snow' are written below the staff.

#3 Find the correct **TIME** value for each note and write it down.

1. Using the secondhand on a watch, time the amount of time it takes you to sing your song.
2. On the sheet music, look at the tempo of the song. In our example it is 4/4 time.
3. The top "4" means that there are four beats to a measure. There are four measures in our song. The vertical lines between groups of notes define a measure.
4. The bottom "4" means that each $\frac{1}{4}$ note gets one beat.
5. Suppose it takes 10 seconds to sing *Mary had a Little Lamb*.

To find out how many seconds each measure gets, divide 4 into 10.
In this case each measure gets 2.5 seconds.

6. To find out how many milliseconds each $\frac{1}{4}$ note (one beat) gets, divide 4 into 2.5. In this case each $\frac{1}{4}$ note gets 625 milliseconds per beat. (You can round these numbers up or down so that they are easier to work with; e.g., 600.)
7. An $\frac{1}{8}$ note is held for one-half the time of a $\frac{1}{4}$ quarter note, or 312 milliseconds (624 divided by 2). A $\frac{1}{16}$ note is held for one-half as long as an $\frac{1}{8}$ note, or 156 milliseconds (312 divided by 2).
8. A $\frac{1}{2}$ note is held twice as long as a $\frac{1}{4}$ note, or 1250 milliseconds (625 times 2).
9. A whole note ($\frac{4}{4}$) is held twice as long as a $\frac{1}{2}$ note, or 2500 milliseconds (1250 times 2).

This gives you a rough formula for figuring out the TIME values.

10. In our example, "Mary" (two $\frac{1}{8}$ notes in the music) makes up one beat and a beat is one $\frac{1}{4}$ note. But "Mary" is broken down into three phonemes: m er iy (the "a" and "r" in Mary is one vowel sound). The "m" "ea" "r" and "iy" phonemes are equivalent to one $\frac{1}{8}$ note. According to our calculations above, an $\frac{1}{8}$ note gets 312 milliseconds.



Shortcut for Finding a TIME Value

If you are not concerned with achieving the exact tempo of a song, there is a quicker way to figure out the TIME values.

Hum a song. Look at a watch or have someone count to calculate the rough timing of the song. Decide how many seconds you want a whole note to be held. Then divide the $\frac{1}{2}$, $\frac{1}{4}$, and $\frac{1}{8}$ notes accordingly.

For example: If you give a whole note the time of 2 seconds (or 2000 milliseconds), then a $\frac{1}{2}$ note gets the value of 1000 milliseconds; a $\frac{1}{4}$ note gets the value of 500 milliseconds; an $\frac{1}{8}$ note gets the value of 250 milliseconds.

By practicing giving whole notes different time values and listening to the results on the Pathfinder, you can approximate the tempo of a song fairly accurately.

#4 Assign TIME and PITCH values to the phonemes.

Now let's figure out how many milliseconds from among the 312 (or 625 for a $\frac{1}{4}$ note) to give to each phoneme.

Vowels are always held for a longer amount of time than consonants. Consonants that stand alone at the beginning and end of words are usually held for short amounts of time.

Now that we know this we can begin to put the phonemes, TIME value and PITCH value together.

The "m" and "er" of "Mary" can probably be sung together—"MER". Together, these two phonemes make up an $\frac{1}{8}$ note. We discovered that

in this song an 1/8 note uses 312 milliseconds, so let's assign a TIME value of 300 to "MER". (300 is easier to work with than 312 and there is no noticeable difference between the length of 300 and 312.)

When you compare the notes on your sheet music with the notes on the PITCH Charts, you see that the first note (MER) has a PITCH value of 24. So "MER" will be sung with a TIME value of 300 and a PITCH value of 24.

The "IY" phoneme is held for about the same amount of time as "MER" when you sing it so let's give it a TIME value of 300, too. When we look at the PITCH charts, we see that its PITCH value is 22.

The first word of our song will look like this when you enter it into the Pathfinder:

```
[MER<300,24>IY<300,22>
```

The second word, "HAD" uses an 1/8 note and contains the phonemes "HXAE D". The "D" is an ending consonant and stands alone. We don't want it to sound too pronounced when the word is sung, so it should get a lesser TIME value than "HXAE".

Now we have:

```
[MER<300,24>IY<300,22>HXAE<220,20>D<80,20>
```

Let's give "HXAE" a TIME value of 220. Its PITCH value is 20. And let's give "D" a TIME value of 80. Its PITCH value is 20. (220 plus 80 equals 300, or an 1/8 note.)

"A" (phonemes "AX") is easy. It's a one-phoneme 1/8 note. It gets a TIME value of 300 and the assigned PITCH of 22.

"LITTLE" must be broken up into "LIH T TUHL". Because we want to hear the "T" pronounced in "little" we should give it its own TIME value. "LIH" and "T" make up the first 1/8 note, so let's give LIH the TIME value of 250 along with its PITCH value of 24. Since an 1/8 note has 300 milliseconds and we have used 250 for "LIH", that leaves us with a TIME value of 50 for "T" (300 minus 250 equals 50). Its PITCH value is 24. "TUHL" uses an 1/8 note so it gets a TIME value of 300 and its PITCH value of 24.

Now we have

```
[MER<300,24>IY<300,22>HXAE<220,20>D<80,20>AX<300,22>
LIH<250,24>T<50,24>TUHL<300,24>"]
```

"LAMB" ("LEYAE M") uses a 1/4 note or about 600 milliseconds. It has an ending consonant, "M" (the "b" is silent) which must stand alone so we can hear it. Let's give "LEYAE" a TIME value of 500. Its PITCH is 24. ("LEYAE" sounds better when sung than "LAE".) "M" then gets a TIME value of 100. Its PITCH value is 24.

When "LAMB" is repeated in the second line of the song, it uses an 1/8 note (300 milliseconds) so give "LEYAE" the TIME value of 200 and "M" the TIME value of 100. The pitch is 24.

Now we have

```
[MER<300,24>IY<300,22>HXAE<220,20>D<80,20>AX<
300,22>LIH<250,24>T<50,24>TUHL<300,24>LEYAE<
500,24>M<100,24>"]
```

MARY HAD A LITTLE LAMB

The song is written down exactly as it is to be entered into the Pathfinder

[MER<300,24>IY<300,22>HXAE<220,20>D<80,20>AX<300,22>

LIH<250,24>T<50,24>TUHL<300,24>LEYAE<500,24>M<100,24>
[LIH<250,22>T<50,22>TUHL<300,22>LEYAE<500,22>M<100,22>

[LIH<250,24>T<50,24>TUHL<300,27>LEYAE<500,27>M<100,27>

[MER<300,24>IY<300,22>HXAE<220,20>D<80,20>AX<300,22>

LIH<250,24>T<50,24>TUHL<300,24>LEYAE<500,24>M<100,24

IH<170,24>T<50,24>S<80,24>FLIY<200,22>S<100,22>WAX<200,2>Z<100,22>

WAY<220,24>T<80,24>AE<200,22>Z<100,22>SNOW<600,20>]

Helpful Hint:

The Pathfinder will power down if no activations are made after a pre-set number of minutes pass. Press any key or switch to continue.

We also *highly recommend* that you have the song written down on a piece of paper exactly as you are going to program it before you begin to enter it. This will save you a lot of time.

🔄 Note: Use of the] and CTRLk in very long songs:

If you are programming a really long song, you may need to use the] and CTRLk to tell the Pathfinder to continue singing. For most songs, this will not be needed.

Select the] key on your keyboard and then select the CTRL key and the "k" key. (You will see a symbol for CTRLk () on your display, not the letters.) When you end a phrase or line of a song with a] (right square bracket) and the CTRLk characters, you *must* start the next phrase or line with a [(left square bracket).

If you do not do this, the Pathfinder will not know it is supposed to continue singing the song.

At the end of the entire song you *must* enter a] (right square bracket).

Storing the Programmed Song

If you do not have all the extra song programming characters on your Minspeak overlay (including TEXT and SPEECH MARKERS if you plan to use them), store the song from the Toolbox.

Storing Using TEXT and SPEECH MARKERS

When you store a song under an icon sequence, each time you activate the sequence to sing the song, the display will show the song just as you programmed it. Using TEXT and SPEECH MARKERS tells the Pathfinder to display only the title of the song. See below.

1. Activate STORE.
2. Select the icon sequence you want to use.
3. Activate INSERT TOOL.
4. Activate TEXT MARKER.
5. Type the title of the song.
6. Activate INSERT TOOL.
7. Activate SPEECH MARKER.
8. Activate the left square bracket [.
9. Type in the song exactly as you wrote it out for programming.
You can listen to your song at any time by activating SPEAK ALL.
You can use the arrow keys and DELETE keys to edit the song and correct any mistakes.
10. Activate INSERT TOOL.
12. Activate TEXT AND SPEECH MARKER.
13. Select OK.
14. Select OK again.

If you do not want to use TEXT and SPEECH MARKERS, skip steps #3-7 and #10-11.

English Vowel Phonemes

Phoneme Symbol	Example	Phoneme Symbol	Example
Vowels			
aa	Bo b	ih	bi t
ae	ba t	ix	kiss es
ah	bu t	iy	bea t
ao	bou ght	ow	boa t
aw	bou t	oy	b oy
ax	a bout	rr	bir d
ay	bi te	uh	bo ok
eh	be t	uw	lu te
ey	ba ke	yu	cu te

R-Colored Diphthongs

ar	b ar
er	b ear
ir	b eer
or	b or e
ur	p oor

Allophones

dx	rid er
lx	wi ll
q	we e at
rx	or ation
tx	Lat in

Silence _ (underscore)

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English Consonant Phonemes

Phoneme Symbol	Example
-------------------	---------

Consonants

b	b et
ch	ch in
d	d ebt
dh	th is
el	bottle
en	button
f	f in
g	g uess
hx	h ead
jh	g in
k	K en
l	l et
m	m et
n	n et
nx	sing
p	p et
r	r ed
s	s it
sh	sh in
t	t est
th	th in
v	v est
w	w est
yx	y et
z	z oo
zh	az ure

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APPENDIX E: STORING SONGS

Pathfinder Manual: Power Tools

Pitch Notes and Pitch Values

PITCH NOTES AND PITCH VALUES

BASS

C C# D D# E F F#

1 2 3 4 5 6 7

G G# A A# B C3 C#

8 9 10 11 12 13 14

D D# E F F# G G#

15 16 17 18 19 20 21

TREBLE

G G# A A# B C4 C# D

20 21 22 23 24 25 26 27

PITCH NOTES AND VALUES (cont'd)

G	G#	A	A#	B	C4	C#	D
20	21	22	32	24	25	26	27

D#	E	F	#F	G	G#	A	A#
28	29	30	31	32	33	34	35

B	C5	C#	D	D#	E	F	F#
36	37	554.5	587.6	622.4	659.6	697.8	740.2

G	G#	A	A#	B	C6	C#
284.4	831.0	880.0	932.4	988.0	1046.6	1109.0

PITCH Value Code

PITCH NOTE	PITCH VALUE	OCTAVE RANGE
C4	25	C4 = Middle C
B	24	
A#	23	ONE
A	22	
G#	21	
G	20	OCTAVE
F#	19	
F	18	
E	17	BELOW
D#	16	
D	15	
C#	14	MIDDLE C
C3	13	
B	12	
A#	11	TWO
A	10	
G#	9	
G	8	OCTAVES
F#	7	
F	6	
E	5	BELOW
D#	4	
D	3	
C#	2	MIDDLE C
C2	1	

PITCH Value Code (cont'd)

PITCH NOTE	PITCH VALUE	OCTAVE RANGE
C4	25	C4 = Middle
C#	26	-
D	27	ONE
D#	28	
E	29	
F	30	OCTAVE
F#	31	
G	32	
G#	33	ABOVE
A	34	
A#	35	
B	36	MIDDLE C
C5	37	
C#	555.4*	TWO
D	587.6	
D#	622.4	
E	659.6	OCTAVES
F	697.8	
F#	740.2	
G	784.4	
G#	831.0	ABOVE
A	880.0	
A#	932.4	
B	988.0	MIDDLE C
C6	1046.8	

* For two octaves **above** middle C, you must enter PITCH values in Herz. This range is quite high for DECtalk speech voices. If you don't like the way a song sounds in this range, try entering the same notes with PITCH values that correspond to one octave **lower**.

TIME Values of Notes

NOTE TIME VALUE CHART

The chart displays musical notation for various note values and rests on a five-line staff. The first staff shows a sequence of notes: a 1/16 note, a 1/8 note, a 1/4 note, a 1/2 note, a dotted 1/2 note, and a whole note. The second staff shows two triplets: a 1/8 note triplet (labeled '3') and a 1/4 note triplet (labeled '3'), followed by a pair of 1/8 notes and a pair of 1/16 notes. The third staff shows rests: a 1/8 rest, a 1/4 rest, a half rest, and a whole rest. A note above the half rest is crossed out with a diagonal line, and a bracket above it is labeled '(each note above gets part of the time value)'. The word 'Whole' is written in a larger, bold font below the whole rest.

1/16 note 1/8 note 1/4 note 1/2 note dotted 1/2 note whole note

1/8 note triplet (= 1/4 note) 1/4 note triplet (= 1/2 note) | pair of 1/8 notes pair of 1/16 notes

1/8 rest 1/4 rest half rest **Whole**

(each note above gets part of the time value)

Appendix F: Helpful DECtalk Speech Tips

Sometimes a word has two different pronunciations. For instance, the word "record" can be pronounced as it is in this sentence, "We kept a REcOrd of how many people attended the museum opening." The word can also be pronounced as it is in this sentence, "Our speech teacher let us reCORD our voices on a tape recorder."

The Pathfinder program will try to speak the word the way you meant for it to be spoken, but in some cases it won't pick the correct pronunciation. When this happens, you can store the word with the **CTRL<space>** tool to tell the Pathfinder which pronunciation to use.

For example, if you type "record" it is usually pronounced "REcOrd." If you want the *alternate* pronunciation for the word, insert the **CTRL<space>** tool just prior to typing in the word, **record**.

To force the Pathfinder to speak the alternate pronunciation without storing the word, activate **CTRL <space>** and then type the word. Speech must be On.

We recommend that you **do not** store alternate pronunciations in the Speech Dictionary, since they are the less frequently used pronunciations of words. If you do store an alternative pronunciation in the Speech dictionary, the Pathfinder will always pronounce the word that way.

The next few pages contain a list of words that have alternate pronunciations which DECtalk speech already knows. There is also a list of all the abbreviations that you can use which DECtalk speech knows how to pronounce.

The last part of this appendix explains how the Pathfinder and the DECtalk speech board handles numbers.

Words with Alternate Pronunciations

abstract	decrease
abuse	defect
addict	delegate
advocate	deliberate
affix	desert
ally	desolate
alternate	diffuse
animate	digest
annex	discharge
appropriate	discount
arithmetic	dove
articulate	duplicate
associate	elaborate
attribute	estimate
august	excerpt
bass	excuse
baton	expatriate
close	exploit
combat	export
combine	extract
compact	ferment
complex	frequent
compound	geminate
compress	graduate
concert	impact
conduct	implant
confederate	import
confine	imprint
conflict	incense
conglomerate	incline
console	increase
construct	insert
contest	insult
contract	interchange
contrast	intimate
converse	invalid
convert	just
convict	lead
coordinate	live

minute
miscount
misprint
misuse
moderate
object
overrun
perfect
permit
pervert
polish
postulate
predicate
predominate
present
proceed
produce
progress
project
protest
read
reading
rebel
recall
recap
recess
record
recount
refill
refresh

refund
refuse
reject
relapse
relay
remake
rerun
research
resume
retake
rewrite
segment
separate
sow
subject
sublet
subordinate
survey
suspect
syndicate
tear
torment
transform
transplant
transport
upset
use
wind
wound

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Abbreviations Recognized by DECtalk Speech

Abbreviation	Word
all-in-one	All in one
Apr.	April
Assoc.	Associates
Aug.	August
Av.	Avenue
Ave.	Avenue
bldg.	Building
Blvd.	Boulevard
CH.	Chapter
cm.	centimeters
cms.	centimeters
Co.	Company
COD	"see-oh-dee"
cont.	continued
Corp.	corporation
Ctr.	center
CTRL	control
cu.	cubic
dec	DEC (as in Digital)
Dec.	December
Dist.	District
deg.	degrees
Dept.	Department
doz.	dozen
Dr.	Doctor (when followed by a name, i.e., Doctor West)
Dr.	Drive (when preceded by a name , i.e, West Drive)
e.g.	"ee""gee" (not 'for example')
ESC	escape
esp.	especially

Abbreviation	Word
est.	established ("eee ess tee")
etc.	et cetera
ext.	extension
Feb.	February
Flt.	flight
FOB	freight on board
fn.	Footnote
Fr.	Father
Fri.	Friday
Ft.	Fort (not 'Foot')
Gen.	General
gm.	grams
Gov.	Governor
hrs.	hours
i.e.	"eye ee" (not 'that is')
Inc.	Incorporated
Intl.	international
Jan.	January
Jr.	Junior
Jul.	July
Jun.	June
kg.	kilograms
kgs.	kilograms
km.	kilometers
lb.	pounds
lbs.	pounds
Ltd.	Limited
Mar.	March
mg.	milligrams
mgs.	milligrams
misc.	miscellaneous
ml.	milliliters
Mon.	Monday
Mr.	mister
Mrs.	missus

Abbreviation	Word
msde.	merchandise
msec.	milliseconds
msecs.	milliseconds
mss.	manuscripts
Mt.	Mount
Nov.	November
Oct.	October
oz.	ounces
ozs.	ounces
Pl.	Place
pp.	pages
ppd.	post paid
Pres.	President
Rd.	Road
recd.	received
Rep.	Representative
Rev.	Reverend
rsts	"ris-tis"
Rte.	route
Sen.	Senator
Sep.	September
Sept.	September
sq.	square
Sr.	Senior
St.	Saint (when followed by a name)
St.	Street (when preceded by a name)
Sun.	Sunday
Thu.	Thursday
Thurs.	Thursday
Tue.	Tuesday
Tues.	Tuesday
Univ.	University
USA	"you-ess-aye"

Abbreviation	Word
---------------------	-------------

Vol.	Volume
vs.	versus
yds.	yards

Exceptions*

nt.wt.	net weight
op.cit.	op cit
p.p.d.	post paid
pat.pend.	patent pending.
Wednesday	

- These abbreviations will **not** work at this time (12/90)

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Producing a Long "A" in the Middle of a Sentence

Usually an "A" by itself in the middle of a sentence is pronounced as "uh," but there may be times when you want it to be pronounced as a long "A" ("ayee"). To achieve this, type in the capital letter "A" and then add a punctuation mark immediately following it:

A, A? A! (A A;

This will change the inflection of the sentence somewhat, but it will produce a long "A".

To Create a Pause within a Word or between Words

Enclose an underscore, `_`, and a number designating the length of the pause within square brackets. For example, `[_<1000>]` tells the Pathfinder to pause for 1 second; `[_<2000>]` creates a 2 second pause. Changing the number changes the amount of seconds the Pathfinder pauses.

Creating a Pause after a Period or a Comma

Generally, the Pathfinder pauses for ½ second after a period, before beginning the next sentence. It will pause for 1/6 of a second after a comma.

If you want to create a longer pause after a period or a comma, add the following indicator to your message:

[:pp4500]

This adds a 4.5 second pause to the regular period pause. You can type in the number you want to use.

[:cp4800]

This creates a 4.8 second pause after the regular comma pause. You can type in the number you want to use.

If you want to return the pauses to their default settings, enter these indicators:

For a period default:

[:pp0]

For a comma default:

[:cp0]

How DECTalk Speech Handles Numbers

1998 is a year. 1,998 is a big number. 1998 (no comma) is spoken as "nineteen-ninety-eight." 1,998 (with a comma) is spoken as "one-thousand-nine-hundred-and-ninety-eight." *Any four-digit number is spoken as a year unless you add a comma after the first digit.* Commas are not necessary if a number contains more than four digits (e.g., 10,375). Numbers containing up to 9 digits are pronounced correctly.

Examples of Entering Math Problems:

When you enter math problems, they must be spaced correctly for DECTalk speech and the Pathfinder to pronounce them correctly.

For example: 5 - 3 = 2

Enter this problem in the following manner:

5 (space) -3(no space between "-" and "3" but add a space after "3")
=(space) 2.

The problem looks like this when it is entered:

5_-3_=_2 ("_" indicates a space)

Examples of Spacing for Other Math Problems:

2*8_=_16; 1*2_=_2 ("*" indicates "times" but the Pathfinder speaks "asterisk".)

2_+8_=_10

1 ½ must be entered as 1&_1/2

(1/2 can be entered by activating "1" "slash" "2".)

At this time DECTalk speech and the Pathfinder cannot speak division problems correctly.

Examples of Entering Dates:

DECTalk speech does not recognize dates if you enter them the way they are normally written, e.g.,

6-8-1990 or 11/20/95

Enter dates in the following manner for them to be spoken correctly:

6-Aug-1990 or 20-Nov-1995

These dates are spoken as "August 6, 1990" and "November 20, 1995".

Example of Entering a Phone Number:

Phone numbers must be entered by placing spaces and commas as shown below:

3 3 0, 2 6 2, 1 9 8 4 or 2 6 2, 1 9 3 3

Appendix G: About Dependent Icons

☞ If you are using one of the Unity overlays, dependent icons are already programmed into the vocabulary. If you are creating your own overlay from scratch, you will want to create dependent icons to make programming the overlay and the retrieval of words from the overlay easier.

Let's say you have an icon that represents NOUN and an icon that represents NOUN PL (plural nouns). Let's also say that you have stored your most commonly used nouns under icon sequences that end with the icon: NOUN. For example, HOUSE+NOUN = home. If you want the word "homes" on your overlay, traditionally you would have to store it under another sequence that ended with the icon: NOUN PL. For example, HOUSE+NOUN PL = homes. This means you would have to store under icon sequences, all the nouns you want for your vocabulary. Then you would have to store all those same nouns again as plurals!

With Pathfinder you can make NOUN PL a **dependent** icon. This means that an icon sequence ending with NOUN PL will be dependent on an identical sequence which ends in NOUN. For example, if you store NOUN PL as a dependent icon and then activate the sequence, HOUSE+NOUN PL, the Pathfinder will look to see what is stored under HOUSE+NOUN. It will see "home" and automatically add an "s" to it. You would see "homes" on your display. Dependent icons save you hours of storing. You can do the same thing with verbs by making icons such as VERB+ed and VERB+ing dependent on sequences that contain the icon: VERB. You store all of the regular verbs you want to use and the Pathfinder will put the correct ending on them.

The next page explains how to create dependent icons.

Creating Dependent Icons

➡ this example assumes that you have added a space after any words that you have stored in your vocabulary.

In this example we are going to assign the icons NOUN and NOUN PL to separate keys. We are also going to make NOUN PL dependent on the NOUN icon. Then we will type in instructions for the Pathfinder to follow whenever the NOUN PL key is activated. These instructions will tell the Pathfinder to find the word stored under a sequence that ends in NOUN, to delete the space after the word that is stored there and to add an "s" and a space to the word.

Assign NOUN to a Key:

1. Go to the Toolbox and open the ASSIGN KEY MENU.
2. Select the key you want to assign NOUN to.
3. Activate the *Minspeak Assignment* option (#1).
4. Make sure the *Assign Key As:* box is set to **ICON**.
5. Activate *Rename Icon*.
6. Type in the name: NOUN.
7. Activate OK twice.

Assign NOUN PL to a Key:

8. Activate the *Select Next Key to Define* option (#6).
9. Select the key you want to assign NOUN PL to.
10. Activate the *Minspeak Assignment* option (#1).
11. Make sure the *Assign Key As:* box is set to **ICON**.
12. Activate *Rename Icon*.
13. Type in the name: NOUN PL.

Make NOUN PL Dependent on NOUN and Type in Directions:

14. Activate OK.
15. Activate the *Icon Type* option (#5) twice.
16. You see a box that asks if you want to make the icon NOUN PL a dependent icon. Answer YES.

17. Select the icon you want NOUN PL to depend on. In this case select the key where you stored NOUN.
18. Now you must tell the Pathfinder what you want it to do when it sees NOUN PL.
 1. Activate INSERT TOOL.
 2. Type "d" and select <DELETE CHARACTER> or activate MORE ITEMS until you see <DELETE CHARACTER> and then select it.
Type the letter "s" and add a space.
19. Activate OK until you exit the ASSIGN KEY menu.

NOUN PL is now a dependent icon. It will add an "s" to any word stored under a sequence that ends with the NOUN icon.

Some Notes and Exceptions for Dependent Icons

You can create dependent icons for many different circumstances. You could have a dependent icon that automatically adds "the" before any noun (e.g., the HOME) or one that adds "es" to nouns (e.g., HOUSES).

However, some irregular nouns and verbs will have to be programmed separately. For example, suppose you have the noun WOMAN stored under the sequence WOMAN NOUN. Since you have made NOUN PL a dependent icon, if you activate WOMAN and NOUN PL, the Pathfinder will display "Womans" instead of Women. You would have a hard time writing a macro to make a dependent icon work with all irregular nouns or verbs because they do not follow a standard format. Because of this, you will have to store irregular nouns and verbs under separate sequences.

For example, using the regular storage process, you can store the noun "women" under WOMAN+NOUN PL. In this case NOUN PL is not used as a dependent icon. It is simply part of an icon sequence for the word, "women".

To Return a Dependent Icon to a Normal Icon

If, for some reason, you decide that you no longer want an icon to be dependent, you can return it to a normal icon.

1. Go to the Toolbox and open the ASSIGN KEY menu.
2. Select the key which you want to return to normal.
3. Activate the *Minspeak Assignment* option (#1)
4. Make sure the *Assign Key As* option is set to **ICON**.
5. Activate the *Icon Type* option (#5) until you see **NORMAL**.
6. Activate OK twice to exit the menu.

Your dependent icon is no longer dependent, and will now act as a regular icon.

Appendix H: External Speaker and Earphone

You can connect an external speaker and earphone to the Pathfinder. (External earphones should be used if you are also using Auditory Prompts.) Their connectors must fit into the following jack sizes on the Pathfinder's top panel:

External Speaker Jack—3.5 millimeter mono; use an 8 ohm speaker

Earphone Jack—2.5 millimeter; mono



Warning!

Do not plug an earphone into the **EXTERNAL SPEAKER** jack. This could cause damage to your hearing.

Appendix I: Creating Macros That Contain Menu Options

Many menus have options that are not listed in the All Tools List as insertable tools. For example, you cannot insert the tool "1-Switch" into a macro. But you can create a macro that includes part of the SELECTION TECHNIQUE MENU that allows you to change your selection technique to 1-Switch Scanning.

Let's say that you normally use the keyboard for your selection technique, but when you get tired you like to change to 1-switch scanning. You might like to create a macro that allows you to change from keyboard to 1-switch scanning. You can store this macro on your overlay and activate it whenever you want to switch selection techniques.

In order to create a macro that includes part of a menu you have to do some homework first.

- You need to know and write down (or remember) the keys that you have to activate in the menu.
- For our 'Keyboard to Scanning' example, you should set up the Keyboard and 1-Switch selection techniques **before** you begin to create the macro so that all the options are set the way you want them when you use a switch.

Homework:

Let's find out what key activations you have to make in the SELECTION TECHNIQUE MENU to change from Keyboard to 1-Switch Scanning.

1. Go to the Toolbox and open the SELECTION TECHNIQUE MENU.
2. The current selection technique should be "Keyboard."
8. Activate option #1.
9. Activate OK.

To Return to the Keyboard

1. Activate TOOLBOX.
2. Activate SELECTION TECHNIQUE MENU
3. Activate Option #1 *four* times.
4. Activate OK.

To Create the "Keyboard to Scanning" Macro:

1. In the Toolbox, activate STORE CORE.
2. Select the icon sequence you want to store the macro under, for example, you might use the pointing finger (REMEMBER) and the medical icon (MEDICAL).
3. Activate OK.
4. Activate "Spell Text for Message" (we will add a message to be spoken at the end of the macro.)
5. Activate INSERT TOOL. Activate "S" on the keyboard.
6. Activate the SELECTION TECHNIQUE menu
7. Type #1.
8. Activate INSERT TOOL
9. Activate OK.
12. Now type a message if you want one, perhaps: "Please plug in my switch."
13. Activate OK when you have completed your message. Activate OK again.
14. Close the toolbox. Go to Minspeak mode.
15. Activate the icon sequence you chose (REMEMBER MEDICAL).
16. The Pathfinder should speak, "Please plug in my switch." Activate your switch once. If you are using Row/Column scanning, the top row of the display screen should be highlighted in red, ready for you to scan.

 If you want to **return** to using the keyboard (that is, if you want toggle between two selection techniques) you must create and store a second macro that takes you back to the first technique.

➡ Besides storing these macros under icon sequences, you can store them in Activity keys or assign them to Core keys.

Other Macros That Might Be Used:

You could modify other selection technique settings for different times of day without going to the Toolbox.

( **Remember**, you can also do this by saving your settings and storing them on your overlay, see pages 211-213.)

You could turn scan beeps on and off using menu selection #3 from the FEEDBACK menu.

Appendix J: Computer Commands for IBM Keyboard and Keypad Keys

➡ Create the <esc> command that you see below by activating **CTRL** [(Control left bracket) in your Toolbox. This sequence (CTRL[]) is shown as <esc> in all commands below.

Keyboard Keys

<esc>backspace.	<esc>f10.
<esc>capslock.	<esc>f11.
<esc>delete.	<esc>f12.
<esc>down.	<esc>home.
<esc>end.	<esc>insert.
<esc>enter.	<esc>left.
<esc>esc.	<esc>pagedown.
<esc>f1.	<esc>pageup.
<esc>f2.	<esc>pause.
<esc>f3.	<esc>print.
<esc>f4.	<esc>right.
<esc>f5.	<esc>scroll.
<esc>f6.	<esc>tab.
<esc>f7.	<esc>up.
<esc>f8.	<esc>,hold,alt.
<esc>f9.	<esc>,hold,control.
	<esc>,hold,shift.

Specify a right or left key by placing an "l" or "r" in front of the key name.

For example, to hold the *left shift key*: <esc>,hold,lshift.

Keypad Keys

<esc>kp0.
<esc>kp1.
<esc>kp2.
<esc>kp3.
<esc>kp4.
<esc>kp5.
<esc>kp7.
<esc>kp8.
<esc>kp9.
<esc>kpslash.
<esc>kpstar.
<esc>kpup.
<esc>numlock.
<esc>sysreq.

<esc>kpdel.
<esc>kpdown.
<esc>kpend.
<esc>kpenter.
<esc>kphome.
<esc>kpins.
<esc>kpleft.
<esc>kpminus.
<esc>kppgdn.
<esc>kpplus.
<esc>kpright.

Appendix J: Apple/Macintosh Computer Keyboard and Keypad Commands

➡ Create the <esc> command that you see below by activating CTRL [(Control left bracket) in your Toolbox. This sequence (CTRL[]) is shown as <esc> in all commands below.

Keyboard Keys

<esc>backspace.	<esc>f9.
<esc>capslock.	<esc>help.
<esc>delete.	<esc>home.
<esc>end.	<esc>insert.
<esc>esc.	<esc>left.
<esc>f1.	<esc>pagedown.
<esc>f10.	<esc>pageup.
<esc>f11.	<esc>pause.
<esc>f12.	<esc>print.
<esc>f13.	<esc>return.
<esc>f14.	<esc>right.
<esc>f15.	<esc>scroll.
<esc>f2.	<esc>tab.
<esc>f3.	<esc>up.
<esc>f4.	<esc>,hold,command.
<esc>f5.	<esc>,hold,control.
<esc>f6.	<esc>,hold,option.
<esc>f7.	<esc>,hold,shift.
<esc>f8.	<esc>hold,alt.

Specify a right or left key by placing an "l" or "r" in front of the key name.

For example, to hold the *left shift key*: <esc>,hold,lshift.

Keypad Keys

<esc>kp0.
<esc>kp1.
<esc>kp2.
<esc>kp3.
<esc>kp4.
<esc>kp5.
<esc>kp6.
<esc>kp7.
<esc>kp8.
<esc>kp9.
<esc>clear.
<esc>kpdel.
<esc>kpdown.
<esc>kpend.
<esc>kpenter.
<esc>kpequal.
<esc>kphome.
<esc>kpins.
<esc>kpleft.
<esc>kpminus.
<esc>kppd.
<esc>kppgdn.
<esc>kppgup.
<esc>kpplus.
<esc>kpright.
<esc>kpslash.
<esc>kpstar.
<esc>kpup.
<esc>numlock.
<esc>reset.

Appendix K: Save Your Setup Settings

Summary:

The insertable tool, SETTINGS MENU, allows you to save from 1-3 different groups of settings.

You may want to set up more than one selection technique and its options so that you can use different techniques during different times of the day. To do this, you need to assign the SETTINGS MENU key to your overlay or to store it under an icon sequence. The Pathfinder will save anything you have set in the SELECTION TECHNIQUE menu, AUDITORY PROMPT menu, FEEDBACK menu, SPEECH menu and OUTPUT menu.

To store the SAVE SETTINGS MENU under an icon sequence:

1. Activate STORE CORE.
2. Select the sequence you want to use.
3. Select *Synthesized* and *Spell Text for Message*.
4. Activate INSERT TOOL.
5. Activate "s" and *More Items* until you see SETTINGS MENU. Activate it.
6. Activate OK.

To Save your settings into the Menu

1. Make sure you are currently using the first set of settings you want to save.
2. Go to Minspeak and activate the sequence you saved the SETTINGS MENU under.
3. Save your current settings to #1 by activating *Save #1 Settings*.
4. Now set up your second technique and save those settings to *Save #2 Settings*.
5. Activate OK to until you exit the menu.

When you are using one group of settings and want to change to another, activate the SETTINGS MENU and then activate the "Use #2 Settings option, or whichever option you have saved settings to.

Once you have saved the settings you want in the SETTINGS MENU, you can store the tools, SETTINGS 1, SETTINGS 2 and SETTINGS 3 under icon sequences on your overlay. Then you can delete the SETTINGS menu if you want. To go to different settings, you just activate the sequence you stored the settings under.

➡ You can assign all these tools to keys on your overlay if you have any keys available.

Store the SETTINGS 1, SETTINGS 2 and SETTINGS 3 tools:

Repeat the Menu storing steps on the previous page to store the SETTINGS 1, SETTINGS 2 and SETTINGS 3 tools under sequences. Replace SETTINGS MENU in step #5 with SETTINGS 1,2 or 3.

To Change Your Settings

1. Activate the sequence where you stored the SETTINGS 1 tool.
2. You see a box that says: "Are you sure you want to replace your current settings with Settings #1?" Answer YES to store the settings.

Now when you are tired of using your headpointer and want to start using a switch or the keyboard, you can activate the sequence where you stored your switch or keyboard settings and the Pathfinder will automatically switch you to the new settings. You can delete the SETTINGS MENU if you are not going to set new settings any time soon.

Appendix L: Troubleshooting



Warning!

DO NOT open the Pathfinder case!

*If you encounter a problem with your unit,
call the PRC Service Department at 1-800-262-1990.
If you are outside the U.S., call your local distributor.*

Do not attempt to open the case!

Battery Charger Warning:



Warning!

Use *only* the battery charger that came with your Pathfinder. Other chargers may damage the batteries or the Pathfinder. This also applies to your headpointer battery charger.

The Battery Status display window on the Pathfinder screen will tell you the battery status at any given time. You must turn the display window **ON** in the FEEDBACK menu, in order to see the status of the batteries.



Remember! You cannot STORE when the batteries are low.

➡ **If the battery charger is plugged in and the battery LED is solid red:**

This indicates that the battery pack is not communicating with the Pathfinder. Allow one hour of charging. If the battery charger LED continues to remain red after the hour of charging, call the PRC Service Department.

➡ **If the batteries in your Pathfinder or Headpointer need to be replaced, dispose of the old batteries properly.** Follow the regulations of your community, state or country for the disposal of batteries.

➡ **Important Note!**

When you turn on the Pathfinder On you must wait a few minutes for the software to open up. The computer screen will remain dark while the software loads. **Do not press the On/Off button again.** Doing so will lock up your device.

If you have locked up the Pathfinder:

Try pressing and holding the I/O and TOOLS keys at the same time.

If the above suggestions does not help:

Press all four keys on the top left side of the Pathfinder case **at the same time.** This re-boots the Pathfinder. All unsaved work will be lost.

➡ **The Pathfinder does not seem to be speaking:**

Go to the toolbox and make sure the speech is On.

Go to the **FEEDBACK MENU** in the Toolbox and set the "Volume" option to it highest setting. Check to see if *Speak when Spelling* is On or Off.

If it is On, check to see if it is set to Words or Letters. If it is set to Words, the Pathfinder will not speak until a whole word is spelled.

➡ **If you are having trouble storing or retrieving messages:**

You may need to exit a theme before you can use the Pathfinder the way you want to. Check the status bar at the bottom of the Pathfinder's display area. If you are in a theme, the theme icon(s) will be displayed followed by a colon.

➡ **If you are using a T-TAM and some characters are not appearing on your computer screen:**

If you send chunks of text over 60 characters in length through the T-TAM, it will probably drop some of those characters. Turn Character Pacing on in the OUTPUT menu or send smaller chunks of text.

➡ **You get double-hits from keys or a 'bouncing' effect when you activate keys, or when you move across the keyboard to activate a key:**

The *Acceptance* and/or *Release* times are too short. Increase these times.

Open the SELECTION TECHNIQUE menu and activate your selection technique option. If the Pathfinder keys are bouncing as you move across the keyboard to your target key, **increase** the *Acceptance Time* and then try activating the keys. If you still experience bounce, increase the *Acceptance Time* a little more.

If you are getting double-activations, **increase** the *Release Time* and practice with the keys. If double-activations continue, increase *the Release Time* a little more.

➡ **Your scanning speed is too slow.**

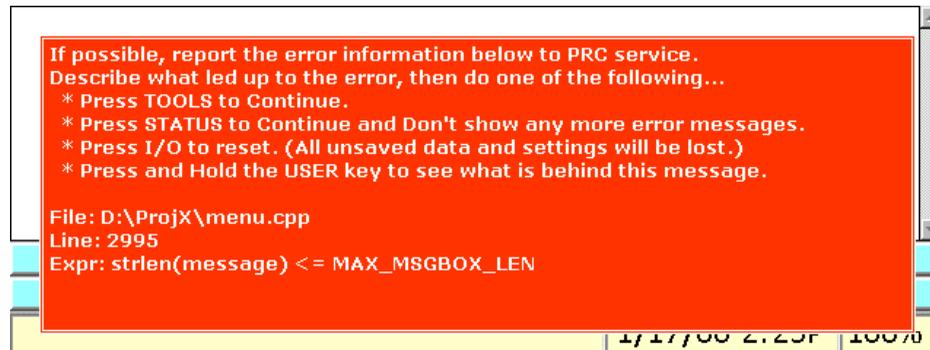
Go to the SELECTION TECHNIQUE menu, select your technique, then set the *Scanning Speed* option to a faster number.

To keep from scanning keys that you don't want to scan, read the pages on **Predictive Selection**, **Modify Predicted Keys** and **Linear Scan**.

➤ About accessing masked messages

If you transfer vocabulary that contains masked messages from a DeltaTalker or Liberator into the Pathfinder, use the **OK** key on the Pathfinder to access the masked messages.

➤ You did something and an Error Box (below) appeared on your display.



If you see this error box on your display, PRC would greatly appreciate it if you would take a few minutes to write down the error code at the bottom of the box (i.e., File; Line; Expr;) and to try to re-construct what you were doing just before this message appeared. Please phone the PRC Service Department and give one of the service representatives the information, or mail the information to PRC. The information can be very helpful to our software engineers as they work to debug the software.

If you need to see the screen you were working on before the box appeared, press and hold the USER key on the front of the Pathfinder. The error box will disappear and you can see the display. When you release the USER key the error box will reappear.

We recommend that you do not choose to turn the error message off (the second option in the box). The information it contains can be very helpful if you have to call service or send the Pathfinder in to PRC.

APPENDIX L: TROUBLESHOOTING

Pathfinder Manual: Power Tools

➤ **About High-Efficiency Fluorescent Lights and the Use of Infrared:**

There is a compatibility problem between many infrared controls and high-efficiency fluorescent lights.

If you are using the Vanguard in a room that has high-efficiency fluorescent lighting, the infrared, including headpointing, computer access, remote control commands, etc., will not work. Turn the lights off and the IR will work fine.

➤ **A Note About Shipping Mode**

When you put the Pathfinder in shipping mode (from the MAINTENANCE menu), wait 10 seconds after activating the option, for the shipping mode to take effect. Once the device is in shipping mode, you cannot activate keys.

➤ **Cleaning the Pathfinder**

Regular Cleaning

Clean the case with a soft, damp cloth.

Clean the display screen with the same kind of product you use to clean glass. Use a soft cloth to wipe off the glass cleaner.

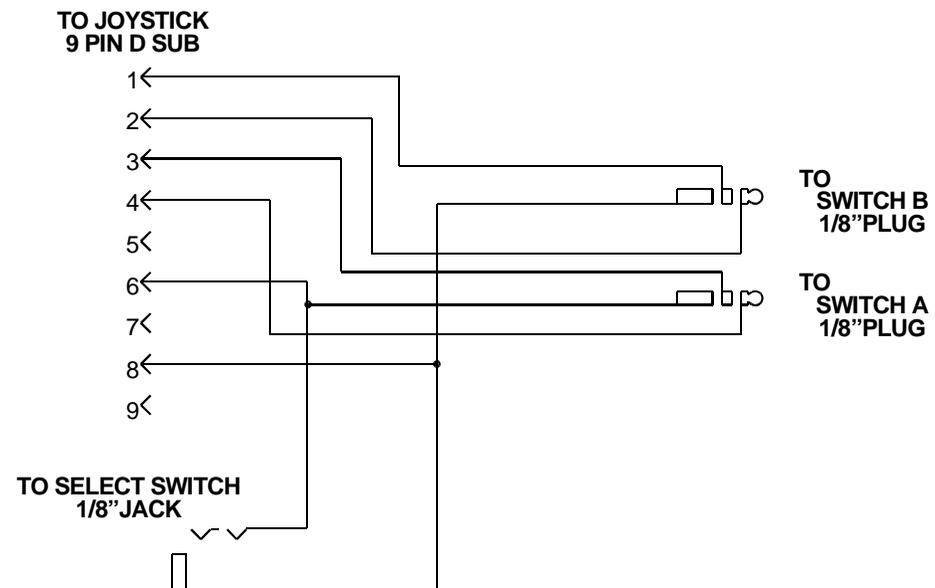
Disinfecting

To disinfect the equipment, mix ¼ cup vinegar with 1 cup water. Wipe all equipment with a cloth *dampened* in this mixture. Allow the equipment to air dry.

Appendix K: The Joystick Adapter

In order to use a joystick with your device you must have an adapter to plug into your device and your joystick. The schematic below shows you the adapter specifications. You can also call the PRC Rehab Department and ask about the availability of Joystick adapters, 330-262-1990.

JOYSTICK ADAPTER CABLE



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