
Speech Recognition

High Tech Center Training Unit

Of the California Community Colleges at the
Foothill-De Anza Community College District

21050 McClellan Road
Cupertino, CA 95014
(408) 996-4636
(800) 411-8954

<http://www.htctu.fhda.edu>

Table of Contents

Dragon NaturallySpeaking Quick Reference Card	(handout)
Dragon NaturallySpeaking Preferred 4.0 (Win 95/98/NT)	1
Addendum	17

Dragon NaturallySpeaking Preferred 4.0 (Win 95/98/NT)

Publisher:

Dragon Systems
320 Nevada Street
Newton, MA 02160
(800) 825-5897
<http://www.dragonsys.com>

Retail Cost: \$199.00 approx.

System Requirements:

Minimum: 200-MHz Intel® Pentium® processor with MMX™, or equivalent, IBM® compatible PC, Windows® 95, Windows 98, or Windows NT® 4.0 (with Service Pack 3 or greater). **Memory Requirements:** Minimum: 48 MB RAM for Windows 95 and 98 (64 MB is recommended), 64 MB RAM for Windows NT 4.0. **Hard Drive Requirements: 200 MB** free hard-disk space, CD-ROM drive for installation. **Audio:** Creative Labs® Sound Blaster® 16 or equivalent sound board supporting 16-bit recording.

Description:

Dragon NaturallySpeaking is a speaker dependent, continuous speech recognition system. The active vocabulary size is 160,000 words with a 250,000-word dictionary that allows for accurate word prediction and spelling. Text can be dictated at around one hundred words per minute. The system accommodates multiple voice profiles per computer.

Features include: Select-and-Say™ editing and convenient Dictation Playback and Text-to-Speech to speed editing and proofreading and the ability to launch applications and drop-down menu commands by voice. Users can now navigate the Internet by speaking URLs and into fields in Web pages when using Internet Explorer 4.0 & 5.0.

Recommended Uses:

This program is recommended for persons with repetitive strain injury or moderate to severe physical disabilities that impair keyboard usage. Users must be able to produce consistent speech output.

Basic Use:

Each user must individually train Dragon NaturallySpeaking. Training is accomplished through use of the General Training program. Creating a voice profile and completing the training process takes about 45 minutes unless you have a faster than 300 MHz processor which may reduce training time to just a few minutes. NaturallySpeaking works within its own dedicated word

processing environment as well as within many popular applications. When using NaturallySpeaking, the following steps are taken:

1. Load NaturallySpeaking from the Programs menu.
2. Activate the microphone by pressing the numeric keypad + key.
3. Begin speaking clearly and distinctly in short phrases with brief pauses between each phrase.
4. If a phrase or word selected by NaturallySpeaking is incorrect say "**Correct**" and the **word or phrase** to be corrected.
5. If the correct phrase or word appears in the suggestion list, say "**Choose**" and then the number of the desired phrase or word in the selection box.
6. If the desired phrase or word does not appear in the selection box, say "**Spell That**" and begin spelling the word using the letters of the alphabet. Generally, the correct phrase or word will be identified after the first one or two letters have been spoken. When the desired phrase or word appears, say "**Choose**" and the number of the phrase or word.

Intermediate Use:

Users can insert punctuation marks by saying the name of the mark, (i.e. "**period,**" "**comma,**" "**question mark**"). A variety of options exist for selecting text. Saying "**Select**" then **word, line, paragraph** or **document** selects a portion of text that can then be edited or formatted in a number of ways. (See attached Quick Reference Guide).

Reading Text

Listening to text that has been dictated provides a useful method for identifying recognition errors. NaturallySpeaking provides two methods for listening to dictated text:

To play back digitally recorded speech of your voice dictating text, select the text to be read (i.e. say "select previous paragraph") then say "play that back." Please note that this option only works for text that has not been previously saved and then reloaded.

To play back computer-generated speech of any text in the NaturallySpeaking composition window, select the text to be read (i.e. say "select previous paragraph") then say "read that." This option works for any text file.

Mouse Grid

NaturallySpeaking provides a **Mouse Grid** navigation system similar to that used in previous and current versions of Dragon Dictate to move the mouse pointer. Saying "**MouseGrid**" displays a 3x3 grid with nine numbered squares which cover the entire screen. Saying the number of a square "refocuses" the grid to the selected square. Repeating the selection process moves the mouse pointer to the desired object by a process of approximation. Saying "**click**" selects the object.

Saying "**MouseGrid Window**" opens the Mouse Grid in the current window. Additional fine-tuning of the mouse pointer can be accomplished by using a limited set of mouse movement commands. Say "mouse (up, down, left or right)" followed by a number between 1 and 10, will move the mouse a few pixels in the selected direction. For example, saying "mouse up 9" will move the mouse pointer up about one-eighth of an inch.

Advanced Use:

Using Internet Explorer by Voice

If you install the NaturalWeb™ Internet Explorer compatibility module you can control Internet Explorer and follow links by voice. Start Dragon NaturallySpeaking before you start Internet Explorer. If Internet Explorer is already running, close it. Start Dragon NaturallySpeaking, then restart Internet Explorer. A NaturalWeb splash screen appears when Internet Explorer starts. When it disappears you can use voice commands to control Internet Explorer, including following links and dictating into editable areas on Web pages, such as boxes on forms.

Following links or clicking buttons by voice

To follow a link or click a button by voice, just say the link or button text or part of the text. You can also say "Click" followed by all or part of the text. You can only follow links that you see on your screen. To follow a link that is low on a page, scroll down until you can see it and then say the link.

A red arrow shows the link or button that is being followed.

If multiple links or buttons match

If more than one link or button matches what you said, an arrow with a question mark appears next to the first one.

1. To click the selected link or button, say "Click That," "That One," or "Click That One."
2. To go to the next match say "Next," "Next Control," or "Next Match."
3. To go to the previous match, say "Previous," "Previous Control" or "Previous Match."

If a link or button does not have text

If you want to follow a link or click a button that does not have text, first say the word or words that best describe the picture. Often, a graphic hotspot has an internal identifier (ALT or NAME) associated with it, and if you say either of these, Dragon NaturallySpeaking will follow the link. If this fails, try the following:

1. Say "Image" to go to the first picture.
2. Say "Next" or "Next Match" until you get to the link you want to follow.
3. Say "Click That" to click the picture.

Notes:

- You cannot follow links on image maps (pictures with multiple links), or on active elements such as Java applets by voice.
- If an image link has an ALT identifier, the Browser may show you the ALT text when you hold the mouse over the image for a short time. You can then say the text you see to follow the link.
- The arrow indicator does not appear in secure documents.

Vocabulary Builder

In order to improve recognition accuracy, NaturallySpeaking provides a Vocabulary Builder option that extracts, analyzes and stores specialized vocabulary drawn from documents you've submitted for review.

To use this option, select **Vocabulary Builder** from the **Tools** menu and follow the onscreen directions.

Notes:

Network:

It is not recommended to run Dragon Naturally Speaking from a server. Even moving voice files from one computer to another requires a special sequence of steps. A networkable version has been announced and will be released some time in the year 2000.

Installation:

For NT installations, always login as Administrator for that computer. Insert the CD into the drive and wait for the install program to start. If your PC does not have autorun enabled, you will have to run setup either from the run command or by browsing in the Explorer. Follow the onscreen directions to install the program.

Most problems with Dragon NaturallySpeaking stem from a poor signal to noise ratio. This may be caused by any of the following: incompatible sound card, a bad microphone, microphone not matched to sound card which may need a booster pack installed, poor voice quality such as not loud enough or inconsistent speech production. High quality microphones are recommended to compensate for these problems.

NaturallySpeaking Commands:

Dictating text quick reference

These are the essentials of dictating text:

Start dictating:

Say whatever you want to say, speaking normally in phrases

Start a new paragraph (press Enter twice):

Say "New Paragraph"

Start a new line (press Enter once):

Say "New Line"

Enter punctuation marks, such as (!):

Say the punctuation mark, such as "exclamation point"

Dictate symbols or special characters such as @:

Say the standard name of the symbol such as "at sign"

To dictate numbers

In most cases you can dictate numbers, including Zip codes, as you normally say them. For more detail on how to dictate numbers, see Dragon NaturallySpeaking User's Guide.

Examples:

<u>To enter</u>	<u>Say</u>
4	"four" or "numeral four"
23	"twenty-three"
179	"one hundred seventy nine"
5423	"five thousand four hundred twenty three"
5,423	"five comma four twenty three"
142,015	"one hundred forty two thousand and fifteen"
0.03	"zero point oh three"
23/4	"two and three fourths"
11/32	"eleven over thirty two"
965-5200	"nine six five fifty two hundred"
617-965-5200	"six one seven nine six five five two hundred"
\$45	"forty five dollars"
\$99.50	"ninety-nine dollars and fifty cents"

8:00	"eight o'clock"
8:30 p.m.	"eight thirty pm"
May 15, 2003	"May fifteen comma two thousand three"
MCMLIX	"Roman one thousand Roman one hundred Roman one thousand Roman fifty Roman nine"

Punctuation and symbols

You can enter the following punctuation marks and symbols in the text you dictate. If the same punctuation mark appears more than once, Dragon NaturallySpeaking treats the character differently depending on what you say. For example, an apostrophe immediately follows the preceding text, while an open single quote is preceded by a space.

To enter Say

	ampersand
	and sign
	apostrophe
	begin single quote
	open single quote
	close single quote
	end single quote
's	apostrophe ess
	asterisk
	at sign
	backquote
	backslash
A	caret
	colon
	numeric colon
	comma
	numeric comma
	dash
	dollar sign
	dot
	point
	period
	ellipsis
	equal sign
	exclamation point
	exclamation mark
	forward slash
	slash

hyphen
numeric hyphen
left brace
open brace
close brace
right brace
left bracket
open bracket
close bracket
right bracket
left paren
left parenthesis
open paren
open parenthesis
right paren
right parenthesis
close paren
close parenthesis
left angle bracket
open angle bracket
less than
close angle bracket
right angle bracket
greater than
minus-sign
number sign
pound sign
begin quote
begin quotes
open quote
open quotes
close quote
close quotes
end quote
end quotes
percent sign
plus sign
question mark
semicolon
space bar
(tab) tab key
tilde
underscore
vertical bar

frowny face
smiley face
winky face

To add new lines and paragraphs

While you are dictating, use the following commands:

To	Say
Start a new line (press the Enter key once)	"New Line"
Start a new paragraph (press the Enter key twice)	"New Paragraph"

Notes:

- Saying "New Paragraph" is equivalent to pressing the Enter key twice (since this is what many people do when typing a document). Saying "New Line" is equivalent to pressing the Enter key once.
- New Paragraph capitalizes the next word you dictate.
- New Line does not capitalize the next word.

Dictation commands

When you are dictating, you can say the following dictation commands without pausing.

Say	To
"New Line"	Press the Enter key once
"New Paragraph"	Press the Enter key twice, capitalize next word
"Cap <word>"	Type <word> with an initial capital
"Caps On"	Start typing words with initial capitals
"Caps Off"	Stop typing words with initial capitals
"All Caps <word>"	Type <word> in all uppercase
"All Caps On"	Start typing words in all uppercase
"All Caps Off"	Stop typing words in all uppercase
"No Caps <word>"	Type <word> in all lowercase
"No Caps On"	Start typing words in all lowercase
"No Caps Off"	Stop typing words in all lowercase
"No Space <word>"	Do not put a space before <word>
"No Space On"	Stop putting spaces between words
"No Space Off"	Start putting spaces between words

Notes:

- To enter the word "cap" (as in "baseball cap"), pause after saying "cap."

- The capitalization and spacing modes are automatically canceled if you move around your document.

Move to the beginning and end of documents and lines

You can use these commands to move to the top or bottom of a document and the beginning or end of a line.

Say	<u>Then say</u>
"Go to"	"Top"
"Move to"	"Top of Document"
	"Beginning of Document"
	"Start of Document"
	"Bottom"
	"Bottom of Document"
	"End of Document"
	"Beginning of Line"
	"Start of Line"
	"End of Line"

Examples:

"Go to Top"

"Move to End of Line"

Note:

- These commands deselect any text that is selected.

Move around by lines and paragraphs

You can use these commands to move around by lines and paragraphs.

Say	<u>Then say</u>	<u>Then say</u>
"Move"	"Up"	"a Line"
	"Back"	"1 Line"
	"Down"	"2-20 Lines"
	"Forward"	"a Paragraph"
		"1 Paragraph"
		"2-20 Paragraphs"

Examples:

"Move Up a Line"

"Move Down 8 Lines"

Note:

- These commands deselect any text that is selected.

Move around by words and characters

You can use these commands to move around by words and characters.

Say Then say Then say
"Move" "Right" "a Word"
 "Forward" "1 Word"
 "Left" "2-20 Words"
 "Back" "a Character"
 "1 Character"
 "2-20 Characters"

Examples:

"Move Right 3 Words"

"Move Left 4 Characters"

Note:

- These commands deselect any text that is selected.

Move the cursor

You can use these commands to move the cursor up, down, left, and right. To use these commands press the corresponding arrow keys.

Say Then say Then say
"Move" "Up" 1-20
 "Down"
 "Left"
 "Right"

Examples:

"Move Right 3"

"Move Up 5"

Revising text: quick reference

You can revise text by voice in any of the following ways:

Delete text:
Say "Scratch That"

Select text:
Say "Select <text>" where <text> is the word or phrase you want to change or "Select <text> through <text>."

Change text once you have selected it:
Say the words you want to replace the selection with.

Back up and resume dictating:
Say "Resume With <word>" where <word> is the word you want to back up to. Then, dictate the revised text.

Important:

- When you use these commands to revise text, Dragon NaturallySpeaking does not learn from its mistakes. If you want Dragon NaturallySpeaking to learn, so errors are less likely to recur, you should correct recognition errors.

To play back dictation in a document

1. Move the cursor to or select the words you want to play back.
2. Say "Play That Back" to play selected text, or say one of the following commands:

"Play Back Line"
"Play Back Paragraph"
"Play Back Document"
"Play Back Screen"
"Play Back Window"
"Play Back to Here"
"Play Back from Here"

You can also start playback by clicking the Play That Back button on the toolbar.

3. To stop playback, click the Stop Playback button on the toolbar, press the ESC key, or click in the document window.

Since speech input cannot be received during playback, you cannot stop playback by voice.

Notes:

- If dictation is not available, playback skips to the next section that has dictation available. Recorded speech is not available for text that was typed or pasted into a document or revised without using the Correction dialog box; for example, by selecting and saying.
- The Play Back Window, Play Back to Here, and Play Back from Here commands only play back dictation for text that is in view. For example, the Play Back from Here command plays back dictation from the cursor to the bottom of the window.
- You can simultaneously stop playback and open the Correction dialog box by pressing the minus key (-) on the numeric keypad. The last phrase played appears in the dialog box for you to correct.
- If the recorded speech for a document exceeds the space available, the earliest dictation is removed.
- You can use your right mouse button to click in a document, and then select commands to start and stop dictation playback.

Internet Explorer commands

"Go To Address"

Move the cursor to the Address box. You can then dictate a Web address.

"Go There" "Click Go" or "Go"

Go to a web address you just entered in the Address box.

"Go To Favorite <name>"

Load the <name> page, where <name> is the name you use for the page in your Favorites REVISE.

"Refresh" or "Reload"

Refresh the current page from the Web.

"Click <any part of a link or button name>"

Follow the link or click the button.

"Click" is optional. "Click That" "That One" or "Click That One"

Click the link or other object, such as an edit box, pointed to by the arrow.

"Next" "Next Match" or "Next Control"

When multiple links or other objects match a command, select the next matching link or object on the page.

"Previous" "Previous Match" or "Previous Control"

When multiple links or other objects match a command, select the previous matching link or object on the page.

"Stop Loading"

Interrupt the loading of a Web page.

"Go Back"

Load the previous page (if available) in the browser's history list.

"Go Forward"

Load the next page (if available) in the browser's history list.

"Go Home"

Load your Home page.

"Type Text" "Edit Box" "Click Edit Box" "Text Field" or "Click Text Field"

Go to the first location on the page where you can enter text.

"Check Box" or "Click Check Box"

Go to the first check box on the page.

"Image" or "Click Image"

Go to the first image on the page.

"Radio Button" or "Click Radio Button"

Go to the first radio button on the page.

"Page Down" or "Scroll Down"

Scroll the page down by a screen.

"Page Up" or "Scroll Up"

Scroll the page up by a screen.

"Line Down"

Scroll the page down by a few lines of text.

"Line Up"

Scroll the page up by a few lines of text.

"Go To Top"

Scroll to the top of the current page.

"Go To Bottom"

Scrolls to the bottom of the current page.

"Start Scrolling Down"

Start automatic downward scrolling of the current page.

"Start Scrolling Up"

Start automatic upward scrolling of the current page.

"Stop Scrolling"

Stops automatic scrolling.

"Speed Up"

Increase the rate of automatic scrolling.

"Slow Down"

Decrease the rate of automatic scrolling.

Addendum

Mi=Dphone -2ech Notes

Some HTC sites have encountered difficulties with microphones connected to soundcards (typically Sound Blaster 32 pnp 16 bit) for use with DragonDictate. There are three important items which must be taken into account in order to ensure compatibility:

- signal level
- impedance, and
- connector type and wiring scheme

The following information is for use with Creative Labs Sound Blaster sound cards, Shure SM10 or WH10 dynamic microphones and Dragon Dictate ver 2.5, for Windows 3.x and 95 software.

The Sound Blaster 32 pnp 16 bit sound card requires a minimum signal input of 10 millivolts. Most professional microphones output only 1 milivolt. The solution is to increase the sensitivity of the microphone input by adjusting the microphone setting using the Sound Blaster Creative Mixer software. Use this strategy cautiously as increasing sensitivity will also increase the amount of "noise" in the signal and can result in reduced recognition accuracy. Another solution is to purchase (from Radio Shack) an inexpensive mic preamplifier.

The Sound Blaster 32 pnp 16 bit sound card has a microphone input consisting of a 2 conductor or (mono) 1/8" mini jack at 600 ohms impedance. The microphone that normally comes with Dragon Dictate for Windows 2.5 has a 2 conductor or (mono) 1/8" mini plug which is compatible with most Sound Blaster Card microphone inputs.

Changing the settings in the Sound Blaster Sound Recorder, in Properties under Format Conversion to 22,050, 16 bit, mono will increase performance over the 22,050, 8 bit, mono default setting.

The **Shure SM-10A/WH10A is a headworn microphone** and has an 200 ohm impedance balances output with a frequency response of 50 to 15,000 Hz. The XLR 3 pin connector version would should be configured as follows:

pin 1-Shield
pin 2-Red
pin 3-Black wires.

To use the SM-10A/WH10A with a Sound Blaster card, the microphone output plug has to be configured with pin 1 (Shield) & pin 2 (Red) connected to the common or (sleeve) side, and pin 3 (Black) connected to the Hot or (Tip) side of a (mono) or 2 conductor 1/8" mini plug.



COMPUTER USE: "PLUG & PLAY"

[Order](#)

[Contact Us](#)

[Features](#)

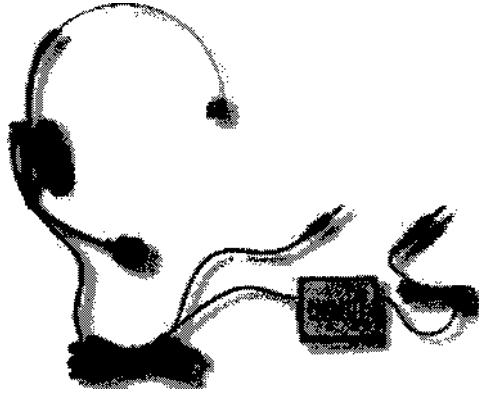
[In the Field](#)

[About](#)

[Telephone](#)

[Tech center](#)

[Home](#)



VXI PARROTT 10-3

(Click the image to see it in a larger size)

Plug & Play

Plug & Play headset systems connect directly to the computer via two standard 3.5mm plugs and include the VXI PARROTT TRANSLATOR for universal compatibility to all PC, laptop and palmtop soundcards. Available in a monaural model or a stereo model with separate left and right sounds channels for multimedia enhanced work.

Factory Prices:

VXI Parrott 10-3: \$74.00

VXI Parrott ST: \$88.00

[Order](#)



VXI PARROTT ST

(Click the image to see it in a larger size)

Questions?

[Read Our FAQ](#)

QUICK DISCONNECT

COMPUTER & TELEPHONY

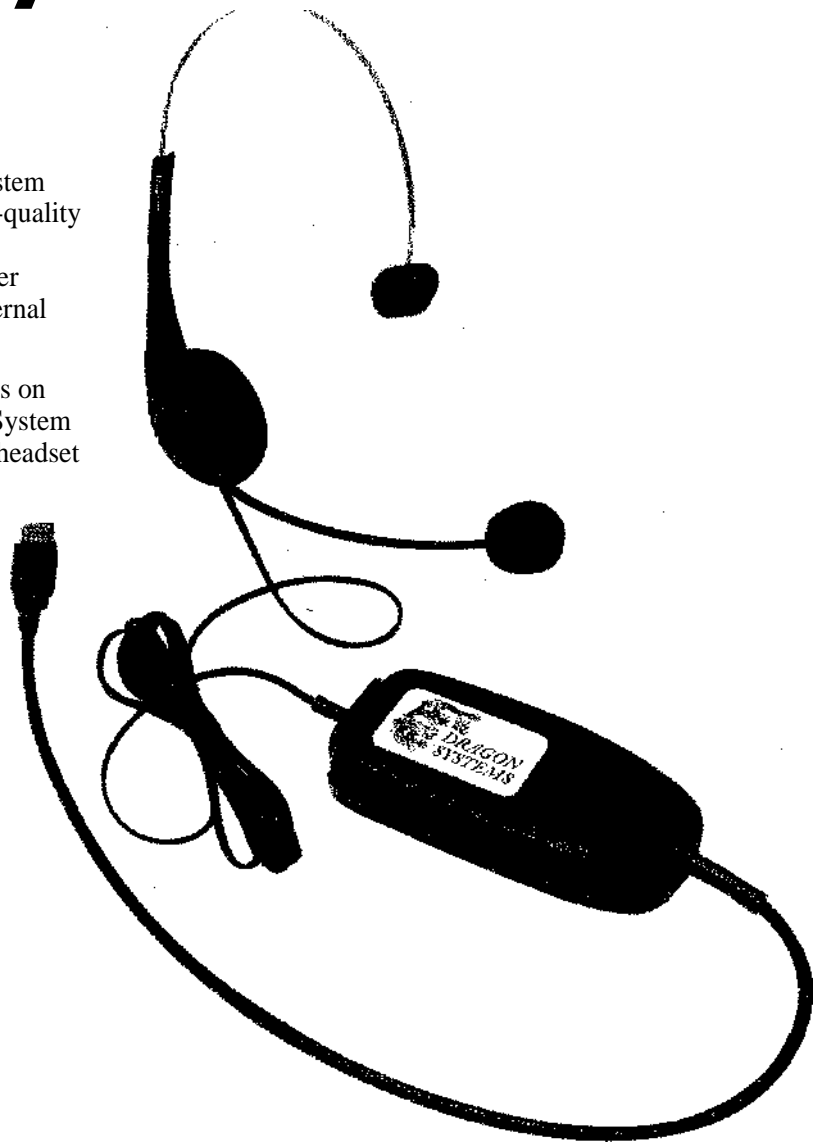
© 1998 VXI Corporation. All Rights Reserved.

One Front Street, PO Box 490 Rollinsford, NH 03869 te:800.742.8588 fax: 603.742.5065

Dragon *Naturally Clear* **US. System H100**

Dragon NaturallyClear™ USB System H100 is the best way to ensure high-quality sound input for speech-recognition applications, even on laptop and other computers with inherently noisy internal environments.

Accurate speech recognition depends on high-quality audio input. The USB System H100 combines a very high-quality headset microphone with built-in sound card elements for converting speech into digital form. Digitized speech is fed directly into the speech-recognition program through a Universal Serial Bus (USB) connection. This solution guarantees high-quality audio input, regardless of the quality of the computer's sound card or built-in sound system.



320 Nevada Street
Newton, Massachusetts 02460

03-080-70-01

Speech Recognition Training

Speech Recognition Introduction & Demonstrations

Dragon Naturally Speaking <http://www.dragonsys.com>

Break 10:15-10:30

Hands-on with Naturally Speaking

Lunch 11:45-1:00

Word and other Speech Enabled Programs

Break 2:30-2:45

Improving Recognition

Objectives

Participants will be able to:

- 1. understand the basic operating concepts and terms of speech recognition systems;*
- 2. identify the capabilities and limitations of several speech recognition systems;*
- 3. train and utilize at least one speech recognition system for dictation and one for application navigation;*
- 4. determine which speech recognition system best fits the needs of a particular student, and;*
- 5. evaluate the potential of introducing effective speech recognition technology on campus based on a better understanding of the cost/benefit ratio.*

Enter punctuation and special characters

Enter:

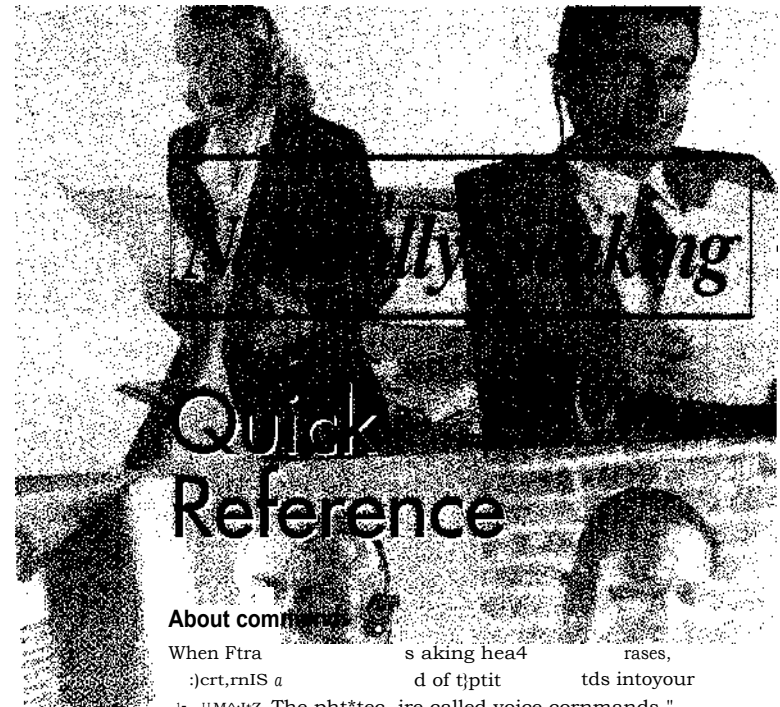
period/ dot/ point	semicolon
comma/ numeric comma	hyphen/ <u>numeric hyphen</u>
question mark	<u>dash</u>
exclamation point/ mark	ellipsis
colon/ numeric colon	apostrophe apostrophe s
slash/ <u>forward slash</u>	backslash
begin quote/ begin quotes/ open quote/ open quotes	end quote/ end quotes/ close quote/ close quotes
begin single quote/ open single quote	end single quote/ close single quote
left paren/ left parenthesis/ open paren/ open parenthesis	right paren/ right parenthesis/ close paren/ close parenthesis
left bracket/ <u>open bracket</u>	right bracket/ close bracket
left angle bracket/ open angle bracket/ less than	right angle bracket/ close angle bracket/ greater than
open brace/ left brace	close brace/ right brace
at sign	minus sign
number sign/ pound sign	plus sign
dollar sign	equal sign
% percent sign	backquote
A caret	tilde
ampersand/ and sign	underscore
asterisk	vertical bar
smiley face	:-(frowny face



Dragon Systems

The Natural Speech Company

Dragon Systems, the Dragon Systems logo, and NaturallySpeaking are registered trademarks of Dragon Systems, Inc. All other trademarks belong to their respective owners. Copyright © 1999 Dragon Systems, Inc. All rights reserved. **03.205-40-01**



Quick Reference

About commands

When you speak a command, Dragon NaturallySpeaking recognizes the command and performs the action. The commands are called voice commands, and they are listed in the Appendix B of your *Dragon NaturallySpeaking User's Guide*.

Following is a list of the most popular Dragon NaturallySpeaking commands. For a complete list, see Appendix B of your *Dragon NaturallySpeaking User's Guide*.

To make commands work:

- Don't pause in the middle of saying a command. If the command is "Scratch That," for example, don't pause between the words "scratch" and "that."
- Do pause briefly before saying the command. The pause lets Dragon NaturallySpeaking know that the phrase may be a command.

What if I say a command, but it's typed as dictation?

If you pause correctly, but Dragon NaturallySpeaking still types your command as dictation, you can force it to recognize what you say as a command by holding down the CTRL key while you speak.

What if I dictate text, but it's interpreted as a command?

If you dictate text, but Dragon NaturallySpeaking interprets your words as commands, you can force it to type your words as dictation by holding down the SHIFT key while you speak.