WestCode
S O F T W A R E

InWords

™

InWords™

Text Scanning Software for the Apple II

by Alan Bird

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Welcome

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Welcome to InWords for the Apple II series -- a revolutionary new way to enter information into your computer. With InWords and a hand-held scanner, you can scan in virtually any printed information – just as if you typed it from the keyboard – only faster. Simply move the scanner over a document, capturing a graphic image of the page, then watch as InWords *converts* the text in the image into a file that you can use with your word processor, data base, spreadsheet or desktop publishing program — ready to edit, analyze, calculate or print.

Customer Support

At WestCode Software we're dedicated to creating high-quality, powerful software that's available at a reasonable price. We care about our customers and want you to be satisfied with your purchase. If you ever have a question or problem with InWords, call us for a quick solution. But, please check the manual first; it may contain an answer to your question.

We've strived to make our products the best possible and believe that software should be regularly updated to support new features requested by our customers. We welcome and encourage your comments and suggestions for improving our products.

Call or write us for product support. Our knowledgeable staff is available weekdays 9-5 Pacific Time.

(619) 679-9200   Support and ordering information
(619) 451-0276   Fax

WestCode Software
11835 Carmel Mountain Road, Suite 1304
San Diego, CA 92128

Registration

Please take a moment now to complete the Registration Card at the end of the manual. Registration will allow us to notify you of updates and enhancements to InWords and to tell you about new products from WestCode Software. Remember, support is available only to registered users.

What You Need

To use InWords you'll need:

- An Apple IIGS® or Apple IIe with at least 512K memory. If you have an older IIe, check to make sure it's enhanced with the MouseText character set ROM and the 65C02 processor.

- A Vitesse Quickie™ or compatible hand-held scanner.

☞ **Apple IIGS users:** If your computer has less than 1 megabyte (1024K) of memory, you'll need to access the GS control panel and set the **Maximum RAM Disk Size** to 0K; this will ensure enough memory for the scanned images.

Optional equipment that makes InWords perform even better:

- An Applied Engineering TransWarp™ or TransWarp GS™ accelerator card will increase the speed of InWords up to twice as fast as the current system speed.

☞ **Apple IIe users:** We recommend an accelerator card for the Apple IIe to bring out the maximum potential of InWords. Without an accelerator, IIe users may need to move the scanner more slowly when scanning at the highest resolution of 400 dots per inch, to avoid missing portions of the image.

What is OCR?

Optical Character Recognition, or OCR for short, is the process of recognizing characters in an image and *converting* them into words (or text). You're performing a kind of optical character recognition right now as you read the words on this page. Your eyes act like a scanner, while your brain converts the image of the characters into words and meanings. For humans, this process is naturally inherent and easily learned. For computers, the technology to perform the same task is considerably complex. InWords makes using this innovative technology easy, and a lot of fun.

How InWords Works

When you scan a page, the scanner captures a graphic image of that page. The image is just a picture of the page, composed of a series of black and white dots, called pixels. Any words or numbers that appear in the image are also just a picture – a picture of text. You can't edit them in your word processor, add them in your spreadsheet, or categorize them in your data base – they're just graphic images. InWords analyzes these images, looking for patterns of pixels that look like characters (letters, numbers and symbols). When it finds a group of pixels that appear to be a character, InWords compares it against a font table in the computer's memory. This table contains a description of what every character looks like in a particular typeface. If a match is found in the table, the appropriate ASCII character is entered into a standard text file. This file can then be edited and saved to disk for use in other programs, such as your word processor.

InWords Features

InWords has been designed for ease of use, accuracy and speed. It has several powerful features that let you scan a wide variety of documents. For scanning newspaper and magazine articles, it provides a method of scanning a single column of text, while ignoring the text in the surrounding columns. To read pages wider than the scanner, like pages in books or typewritten reports, InWords will "merge" two separate scans into a full-page. With documents that have more than just text on the page, InWords will find the text on the page, while automatically ignoring graphics, photos, or any lines on the page. And to ensure that InWords will read the documents you want to scan, it has the ability to learn how to recognize new typefaces.

What InWords Can Read

InWords can be trained to read just about any style of printed type: monospaced or proportional, typeset, typewritten, laser printed or high-quality dot-matrix printed.

InWords cannot read draft dot-matrix, fax output (some newer fax machines have high-resolution output that may work), ditto sheets, and of course, hand-written text.

What's in this Manual

This manual is organized into five sections: Introduction, Learning InWords, Using InWords, Reference, and the Appendix.

Introduction	This is the section you're now reading. Chapter 1, *Welcome*, tells you what you need to know before you start using InWords. The next chapter in the section, *Getting Started*, describes how to work with the InWords menus and commands, and how to start InWords.
Learning InWords	To introduce you to the fundamentals of scanning and using InWords, this section has two chapters, *Your First Scan* and *Training New Typefaces*, that explain how to scan in text and how to teach InWords to recognize new typefaces.
Using InWords	This section has several more chapters that lead you through the process of scanning different types of documents. *Scanning a Full Page* illustrates how to scan a full page document that's wider than the hand-held scanner. *Scanning Columns* shows how to scan columns of text that appear next to other columns.
Reference	The reference section describes each feature of InWords, explaining the menu options and commands.
Appendix	Appendix A contains information on importing text scanned with InWords into other popular applications. Appendix B provides a summary of keyboard commands.

NOTES File

Any changes to the manual or software that have been made since this manual was printed appear in the NOTES file on the InWords disk. Read this file by running the READ.NOTES program. See *Starting InWords* if you don't know how to run a program. The NOTES file is a standard AppleWorks word processor file that can be printed with AppleWorks if you so desire.

INTRODUCTION

Getting Started

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This chapter tells you what you need to know to begin using InWords. It explains how to start InWords, and how to use the menus and commands. Take a moment to read through this section to ensure that you get off to a good start using InWords.

Before Starting InWords

If you haven't already installed your scanner, follow the installation instructions that came with the scanner. You may want to read through the scanner manual to familiarize yourself with the scanner's switches. The scanner manual will also explain how to use the software that came with the scanner for scanning graphics. This software isn't necessary for using InWords, since InWords controls the scanner directly. However, you'll certainly want to use this software when scanning photos or drawings – InWords is for scanning text only.

Starting InWords

InWords is supplied on both 3.5" and 5.25" disks. To start InWords, insert the original InWords disk into your startup drive, then turn on the computer.

If your computer is already on, press ○-Control-Reset (while holding down the Open-Apple and Control keys, press the Reset key, then release the Reset key first). In a few moments the InWords title screen will appear.

Starting from the GS/OS Finder™

If you're using the Apple IIGS and want to start InWords from the GS/OS Finder, insert the original InWords disk into your disk drive.

After a moment, a disk icon labeled "INWORDS" should appear on your screen. Open the disk by double-clicking on the InWords disk icon.

Once the disk is opened, several files will appear within the window. Locate the file labeled "INWORDS.SYSTEM" and double-click on the file icon. In a few moments the InWords title screen will appear.

Starting from a Program Selector

Your system may have a program selector installed for starting programs. The version of ProDOS on the InWords disk includes a simple program selector that allows you to start another program after you quit a program.

To start InWords from the ProDOS program selector, use arrow keys to highlight INWORDS.SYSTEM, then press Return. If you're using a different selector than

the one provided with ProDOS, refer to its instructions for details on starting a system program.

Starting from BASIC
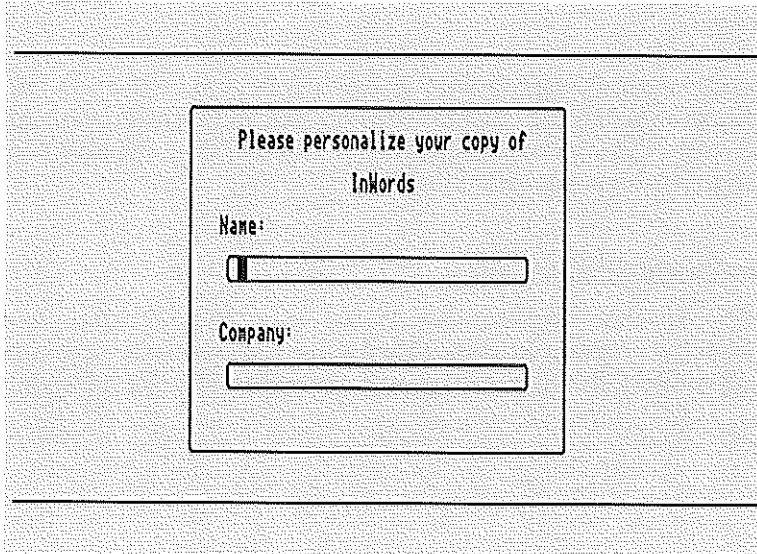
You may start InWords from Applesoft BASIC by typing the following ProDOS command:

```
-INWORDS.STARTUP
```

This will run a small system program that loads INWORDS.SYSTEM.

Adding Your Name to the InWords Disk

The first time you start InWords, you are asked to personalize your original InWords disk. You should do this before making a working copy.

```
        Please personalize your copy of
                   InWords

Name:
┌────────────────────────────────────┐
│▊                                   │
└────────────────────────────────────┘

Company:
┌────────────────────────────────────┐
│                                    │
└────────────────────────────────────┘
```

1. Type your name in the Name box, then press Return.

2. Type your company or organization in the Company box, then press Return.

The information you type will appear every time you start InWords. You must enter your name and/or a company name.

Make a Working Copy of the InWords Disk

After you have personalized your original InWords disk, you should make a working copy of the disk to prevent accidental loss or damage. Use only the copy and put the original disk in a safe place.

To make a working copy of the InWords disk, use your favorite disk copy program or the GS/OS Finder.

Copying InWords to a Hard Disk

If you have a hard disk, you'll want to install InWords on the hard disk for faster access.

Use a file copy program, such as Apple II System Utilities on the Apple System disk, or the GS/OS Finder to create a new subdirectory, or folder, named InWords. Copy all of the files, except ProDOS, from the InWords disk to the subdirectory on your hard disk.

No Copy-Protection

InWords is not copy-protected so you can make a backup copy of the program or install the program onto your hard drive without the typical inconvenience of copy-protected software. However, you may not make copies for other people.

Selecting Options and Commands

InWords displays options on menus that look like file cards (if you use AppleWorks® this will look very familiar). This text based interface is intuitive and easy to learn.

Menu Options

Numbered menu options are displayed on a file card with the selected option highlighted. To choose an option, use the up and down arrow keys to move the highlight bar, or type the option number, then press Return.

Some options allow you to change settings, while others may lead to other menus. Pressing the Escape key will go back to the previous menu, as indicated at the upper right corner of the screen.

```
File: Untitled 1                SCAN              Escape: Main Menu

     Main Menu
        Scan

          1. Standard scan
          2. Merge scan
          3. Column scan

          4. Font training:          No
          5. Recognition precision:  ▓▓░░
          6. Continuous display:     No

          7. Append to file:         No

          8. Font table:             Sample 1

Type number, or use arrows, then press Return
```
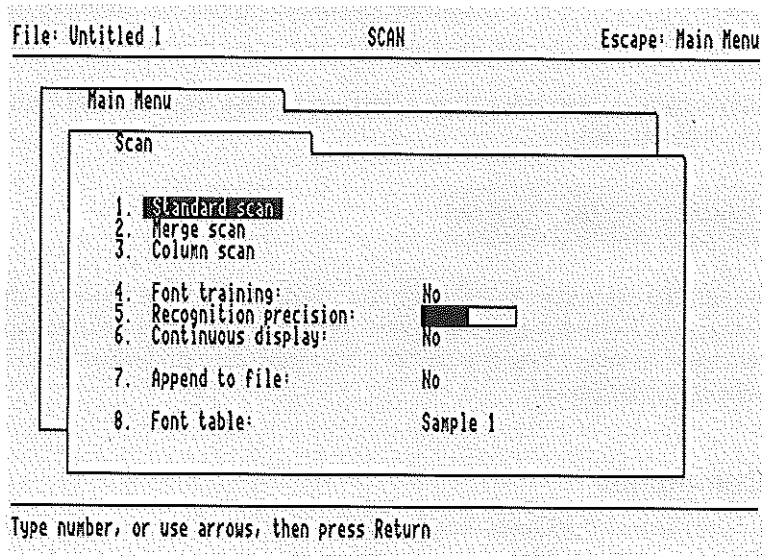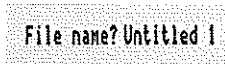
InWords will retain any settings, such as the Yes/No settings shown in the above menu, so that the next time you use InWords they will remain the same.

Prompts

InWords indicates the available actions with a prompt at the bottom line of the screen.

Certain prompts ask you to type in a response, such as a file name.

File name? Untitled 1

Type a response, then press Return. You may also use the following commands:

Return	Accept the default response.
Esc	Go back without typing a response.
Delete	Delete the character to the left of the cursor.
Left/Right arrows	Move the blinking cursor one character to the left or right.
⌘-E	Switch between the insert and overstrike cursors.
⌘-Y	Delete the characters from the cursor to the end of the line.

InWords may also ask you to select a response from several choices, such as a Yes/No question.

Clear text in editor? ☐No Yes

To select a response, use the left and right arrow keys to move the highlight bar, then press Return, or alternatively, type the first letter of the response. For instance, to select Yes, type a "y". You may also press Esc to go back without selecting a response.

Commands

InWords uses the Open-Apple key for keyboard commands. When you see the ⌂ symbol followed by a letter or character, it means to hold down the Open-Apple key (the key to the left of the space bar) while typing the character. This is similar to typing an uppercase letter by pressing the Shift key. To type ⌂-A, for instance, hold down the Open-Apple key while typing the "A" key.

Reset Key

You should never need to use this, but in the event that InWords locks up without accepting input, you can press the Control-Reset keys (hold down the Control key and press the Reset) to return to the Main menu.

What's Next

The next two chapters explain the basics of scanning and using InWords, and how to "teach" InWords to read a new typeface. By reading these first, you'll be ready to start scanning in your own words.

Your First Scan 3

This first tutorial leads you through the process of using InWords to scan a section of text and convert it into an editable file. Here we take our time and move step-by-step. Later chapters build on the experience you gain from this tutorial, so read this first. Scanners ready, let's get started.

Scanning a Paragraph

The following steps explain how to scan a short sample paragraph, and then have InWords automatically convert the scanned picture of the paragraph into text that can be edited. In this tutorial you will be using a font table that has been pre-trained to recognize the Courier typeface used in the sample.

1. **Start InWords.**

   After a moment, the InWords title screen will appear. Press the space bar to continue to the Main menu . If you have problems starting InWords, see *Starting InWords* in the previous section.

2. **Set the Letter/Photo switch on the scanner to the Letter position.**

   This switch is on the left side of the scanner. Move it to the LETTER setting, the rightmost position. When using InWords the switch must be set to this position at all times, which is easy to remember because InWords scans in letters.

3. **Set the scanner resolution to 300 dots per inch.**

   The dots per inch (dpi) switch is on the right side of the scanner. Move it to 3 for 300 dots per inch. You will change this setting depending on the size of the text you intend to scan. Generally, smaller size text will require a higher dpi setting.

4. **Adjust the Light/Dark thumbwheel.**

   This control, located on the left side of the scanner, allows you to adjust the brightness of the scan. Move the thumbwheel so the center notch is just past the midpoint, slightly towards the dark side. You may need to adjust this later if the scanned image appears too dark or too light.

5. **Choose Scan from the Main menu.**

   The Scan menu shows the various options for scanning a document.

```
File: Untitled 1                    SCAN                    Escape: Main Menu

    ┌──Main Menu ──────┐
    │     ┌──Scan ─────────────────────────────────────────┐
    │     │                                                 │
    │     │   1. Standard scan                              │
    │     │   2. Merge scan                                 │
    │     │   3. Column scan                                │
    │     │                                                 │
    │     │   4. Font training:         No                  │
    │     │   5. Recognition precision: [███   ]            │
    │     │   6. Continuous display:    No                  │
    │     │                                                 │
    │     │   7. Append to file:        No                  │
    │     │                                                 │
    │     │   8. Font table:            Sample 1            │
    │     │                                                 │
    │     └─────────────────────────────────────────────────┘

Type number, or use arrows, then press Return
```
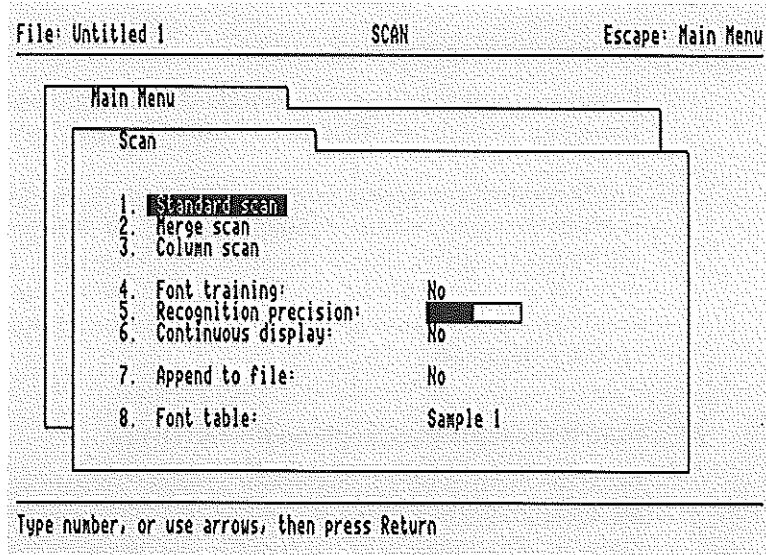
6. Check the selected font table.

Make sure the current font table, shown at option 8, is set to Sample 1.
This table has been pre-trained to recognize the typeface used in this
sample. If a different font table is shown, use the **Font table** option to
choose this font.

7. Set the Font Training option to NO.

This will cause InWords to recognize the whole paragraph without
stopping for unrecognized characters.

The **Font Training** option is known as a toggle option because you can
switch between YES and NO by pressing Return. If it is set to YES, select
option 4, then press Return to set it to NO.

8. Choose the Standard scan option.

In this example you'll use the **Standard scan** option since the sample paragraph is narrower than the width of the scanner's head.

The Standard scan screen will show how much memory in your computer is available for the scanned image, the current dots per inch (dpi) setting on the scanner, and the maximum scan length possible. Generally, the more memory you have, the longer the image you'll be able to scan. As you scan an image, the on-screen gauge will indicate the amount of memory being used for the image.

9. Scan the sample paragraph on the next page.

Place the manual on a flat, smooth surface. To help you learn how to align the scanner, we've provided position lines for some of the samples in the manual. Align the top of the scanner just below the top line and within the left and right marks. Look through the plastic window at the top of the scanner and notice that the green light appears just above the first line of text.

☞ **Scanner alignment tip:** To align the scanner perfectly every time, position the scanner so the green light highlights the first line of text you want to scan, making sure it's straight, then roll the scanner up so the light is just above the line.

To start the scan, hold down the START button on the left side of the scanner while pulling the scanner straight down the page, using a slow, steady pace. As you move the scanner, InWords provides an audio feedback that will help you keep a constant scan speed. A good target speed is about one inch per second.

If you move the scanner too fast, the indicator light on top of the scanner will flash or go out. If the light flashes, continue with a slower motion. If the light goes out, you missed portions of the original document and you'll need to re-scan the text by releasing the start button on the scanner, then typing ⌘-R to select the **Redo scan** command.

Once the scanner's head is past the last line of text, release the button.

Align top edge of scanner below line

When in the course of human events it
becomes necessary for one people to
dissolve the political bands which
have connected them with another, and
to assume among the powers of the
earth the separate and equal station
to which the laws of nature and of
nature's God entitle them, a decent
respect to the opinions of mankind
requires that they should declare the
causes which impel them to the
separation.

We hold these truths to be self-
evident, that all men are created
equal, that they are endowed by their
Creator with certain unalienable
rights, that among these are life,
liberty, and the pursuit of happiness.

Sample 1

The scanned image of the page appears on the screen. This allows you to preview the image to determine if the scanning speed or contrast need adjusting.

```
When in th

becomes ne

dissolve t
```

Use arrows, Ó-arrows, or Ó-1 thru Ó-9 to scroll.
Use Ó-Z to zoom. Ó-R to redo scan.
Press Return to recognize, Esc to cancel.
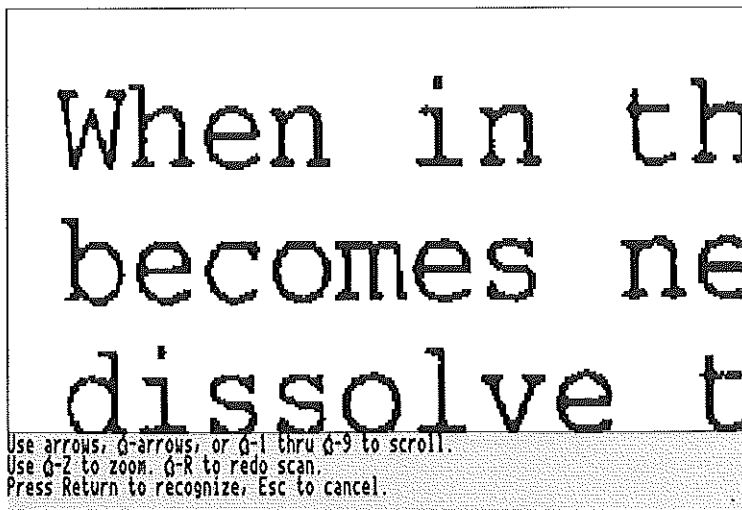
10. **Examine the scanned image on the screen, checking the alignment and quality of the image.**

Because the scanner creates several hundred dots for every inch of the original page that's scanned, only a portion of the scanned image appears on the screen when displayed at full-size. Use the up, down, left and right arrow keys to move around within the image. To move a greater distance, hold down the Open-Apple key while pressing one of the arrow keys. You can also zoom-out by typing Ó-Z to see a reduced view that shows the entire width of the scanned image. Typing another Ó-Z will return to the full-size display.

Look at the image and make sure that the text isn't cut off at the edges or at the top or bottom. Also check the skew, or slant, of the scan. If the text appears highly slanted in either direction, you'll need to re-scan. InWords will work with a slightly skewed image, but try to keep the scanner as straight as possible when scanning.

Next, check the brightness of the scanned image. The letters should be crisp and well formed. If the letters in the text are not fully formed with sections missing, then the image is too light. If the letters run together or are filled-in, it's too dark. A good scan is critical for InWords to work correctly. See the following examples of good and bad scans.

Too Light	Too Dark	Just Right
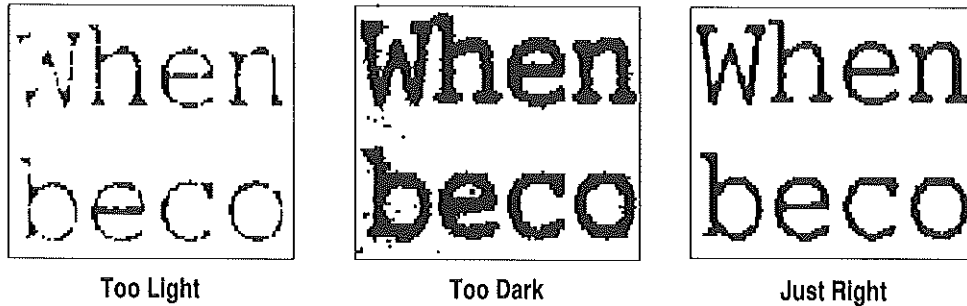
If necessary, adjust the Light/Dark thumbwheel (the wheel is very sensitive, so don't move it too far in either direction - a slight movement will do), then use the **Redo scan** command ⌘-R to make a new scan. You can repeat this process as many times as you like, so take your time and experiment with different settings until you get a feel for adjusting the Light/Dark control.

11. **With a good scan you're ready to start the recognition process – press Return to enter the Recognition mode.**

InWords will begin converting the letters in the scanned image into text. As InWords identifies each line of text, it's displayed on the screen. If you need to stop and cancel the recognition process for any reason, press the Esc key.

Once InWords has recognized all the characters in the image, it will display the complete text in the editor.

Congratulations, you have successfully completed your first OCR scan using InWords! Wasn't that easier, and faster than typing in the text?

If you notice a lot of errors in the text, you may have improperly adjusted the scanner or used the wrong font table – repeat the scanning steps if necessary to get the correct text.

Editing Scanned Text

The InWords editor lets you review and modify the scanned text before saving it to a file. You can use it to check the accuracy of the text against the original and make any necessary corrections.

The editor works just like a word processor, allowing you to change, insert and delete text. You may use the arrow keys to move the cursor around the screen.

See the Reference section for more information on using the editor.

```
File: Untitled 1                  EDIT               Escape: Main Menu

When in the course of human events it
becomes necessary for one people to
dissolve the political bands which
have connected them with another, and
to assume among the powers of the
earth the separate and equal station
to which the laws of nature and of
nature's God entitle them, a decent
respect to the opinions of mankind
requires that they should declare the
causes which impel them to the
separation.

We hold these truths to be self-
evident, that all men are created
equal, that they are endowed by their
Creator with certain unalienable
rights, that among these are life,
liberty, and the pursuit of happiness.

Type entry or use ◊ commands        Line 1  Column 1        37K Avail.
```

Saving Scanned Text

Once you have checked the text and and made any necessary modifications, you'll need to save it in an appropriate format to use it in another program, such as your word processor, data base, spreadsheet, telecommunications, or desktop publishing program.

InWords can save the text in three different file formats. The format you choose depends on which program you want to use the text in and how that program reads files. The most common format is an ASCII text file, which you can import into almost any program.

To save the sample text from this scan:

1. Press ESC to exit from the Editor and return to the Main menu.

2. Choose the **Save file** option.

```
File: Untitled 1              SAVE FILE              Escape: Main Menu
┌──────────────────────────────────────────────────────────────────┐
│  ┌─ Main Menu ──────┐                                             │
│  │  ┌─ Save file ──────┐                                          │
│  │  │                                                             │
│  │  │      Save as:                                               │
│  │  │   1. ▉▉▉▉▉▉▉▉                                               │
│  │  │   2. Text file with return after each line                  │
│  │  │   3. AppleWorks word processor file                         │
│  │  │                                                             │
│  │  │                                                             │
│  └──┘                                                             │
│                                                                   │
└──────────────────────────────────────────────────────────────────┘
Type number, or use arrows, then press Return
```
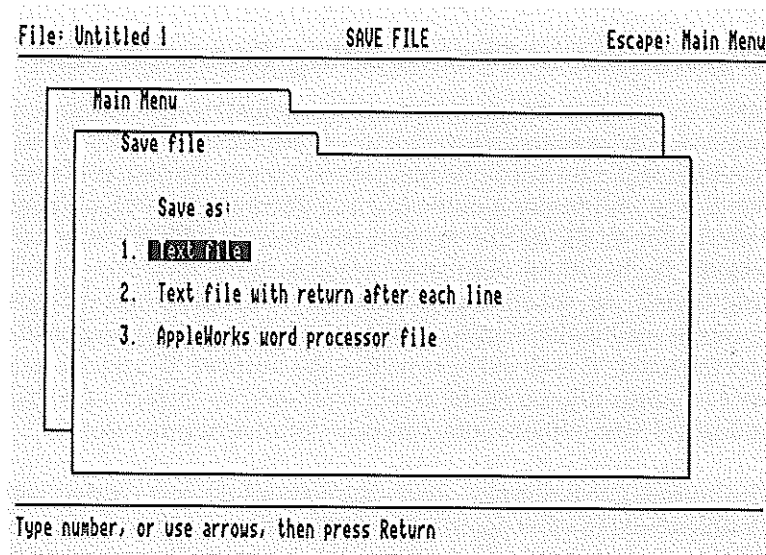
3. Choose the option to save as a **Text file**. This will save the sample in a paragraph format without adding a carriage return after each line of text.

   Saving the text in this format allows you to change the margins of the text within your word processor. If carriage returns were added to the end of each line, the text would retain the basic format that it had when scanned in.

4. InWords will ask you to enter a name for the file. You can press Return to accept the default name supplied by InWords or enter a different name. To enter a different name, press ⌘-Y to erase the default name, then type SAMPLE1.TXT and press Return.

If you want to save the text in one of the other formats, such as text file with return after each line or an AppleWorks word processor file, choose the appropriate option from the Save file menu.

After the text is saved, you may perform additional scans or exit InWords and load the text into another program.

See Appendix A for information on importing files into other programs.

Importance of Proofreading Scanned Text

InWords has been designed to read text quickly and accurately, with the emphasis on accuracy. However, there are many factors beyond the control of InWords that may affect the accuracy of the recognition process: the quality, paper type and printing of the original document, smudges, pencil marks, or coffee spills on the document, and most importantly, the scanner's brightness setting. Each of these may cause mistakes in the final text generated by InWords. Additionally, an inherent problem in any OCR process is that some letters and numbers may look the same. For instance, in some typestyles the number "1" and the letter "l" look alike, as well as the number "0" and the letter "O". This kind of substitution mistake is relatively easy to correct with spelling checkers and search-and-replace commands in your word processor.

The bottom line is simple – always proofread the text created with InWords. Double-check the text against the original document, looking for character substitutions and omissions. If possible, use a spelling checker to quickly find these types of mistakes. Remember, just because you scanned in the text instead of typing it, you shouldn't skip the important step of proofreading. OCR isn't perfect, but neither is the average typist.

Where to Go Next

The tutorial in the next chapter describes how to "teach" InWords to recognize new typefaces. Read this chapter if you intend to scan a document and there isn't an existing pre-trained font table for the typestyles used in the document.

Training New
Typefaces

4

InWords can read a variety of typefaces the first time you use it. However, in
today's world, text appears in many styles and sizes, so we've designed InWords
to be flexible by giving it the ability to "learn" how to read new typefaces.
Through a simple training process you can teach InWords to recognize just about
any type of text.

The following tutorial illustrates how to build a new font table to recognize the
typestyles used in the sample page in this tutorial.

What are InWords Font Tables?

Every book, magazine article, newspaper story, or report you read has been printed with a particular style and size of lettering or **typeface**. There are hundreds of different typefaces in use today, so InWords needs the ability to read a variety of typefaces and learn how to read new typefaces.

To recognize text, InWords compares the characters in a scanned image against a table that describes what each character looks like. When an appropriate match is found, InWords identifies a character. This table, called a **font table**, contains a description of each letter, number and symbol in a particular typeface. A font table can actually contain character descriptions for several different typefaces, allowing InWords to recognize many styles of type in a single scan, such as bold headings and plain body text.

Pre-Trained Font Tables

In the previous chapter, you scanned and recognized a passage of text using a pre-trained font table, Sample 1, which enabled InWords to correctly identify the characters in the sample text. This same font table may not work for other styles of type, outside of the Courier typeface used in the sample. If you want to scan a document that has a different group of typefaces, you'll need to switch to the correct font table or, if there isn't one already trained for the typefaces, you'll need to build a new font table.

Font tables are stored as separate files on the InWords disk. You may have noticed that there are a few font table files already on the disk. These have been "pre-trained" to recognize typefaces used in common documents. The STANDARD font table contains character definitions for several common typefaces, allowing you to read many different documents without the need to train a new font or switch between different font tables. The other tables are trained for specific typefaces used in certain magazines and newspapers. The file names of these tables indicate what magazines or newspapers they are trained to recognize.

Is Training Necessary?

The first question that's probably on your mind is "Do I need to train InWords for each document I want to scan?" The answer depends on whether the

typefaces in the document match any of the pre-trained typefaces in the STANDARD font table or the other pre-trained font tables on the InWords disk. The next question is "How do I know if they match?" Simple. Select STANDARD, or one of the other tables, as the font table, then scan in a small section of the document and let InWords attempt to recognize it. If you get a lot of incorrectly identified characters or just plain gibberish, then the pre-trained font table doesn't contain those typefaces; you'll need to train InWords how to recognize the new typefaces used in the document.

Training InWords to Recognize New Typefaces

Before you scan a document that is printed in a new typeface, you'll need to "teach" InWords what each character in the typeface looks like. The training process is easy and only takes a few minutes.

To create a new font table, you scan in a section of text that is printed in the typeface you want. Then, during the recognition process, InWords will stop at each unrecognized character and ask you to identify the character image by typing the character on the keyboard. In essence, you're teaching InWords the ABC's of that particular typeface. Once a character is identified, InWords will automatically recognize further instances of the same character image.

In this tutorial you will create a separate font table just for the typefaces used in the sample text. When you make your own font table, you may want to create one big table, like the pre-trained STANDARD file, for your general use. By using one file for most of your typefaces you won't need to deal with a lot of separate font table files and the trial and error process of trying to figure out which file recognizes a particular typeface.

However, for frequently used fonts, you'll want to create separate font tables instead of adding to one big table. For instance, you could have a separate font table for each of your different magazine typefaces, your local paper, or the typeface on your old typewriter. Individual font tables will usually improve the recognition accuracy and increase the recognition speed.

Building a New Font Table

The following steps take you through the process of creating a new font table for the typefaces used in the sample page that follows. You'll notice that the sample is printed in three typestyles: boldface for the headings, plain body text, and italics for the section and clause headings. These can all be trained in a single font table.

1. **Adjust the scanner switches and Light/Dark thumbwheel.**

   ■ Set the Letter/Photo switch to Letter.

   ■ Set the scanner resolution to 4 for 400 dpi (dots per inch).

   The typeface in the text for this tutorial is small and closely spaced, so you need to use a higher resolution of 400 dpi to capture more detail of the original page.

   ■ Adjust the Light/Dark thumbwheel.

   Move the thumbwheel so the middle notch is approximately centered between the light and dark positions. This may need to be adjusted later after scanning if the image appears too dark or too light.

2. **Select Scan from the Main menu.**

3. **Create a new font table and set the Recognition precision.**

   Choose the **Font table** option from the Scan menu. InWords will display a list of the font table files on the InWords disk. Choose the first item **<Create New Font Table>**.

```
File: Untitled 1                    FONT TABLE                    Escape: Scan

        Main Menu
          Scan
            Font table

                    <Create New Font Table>
                    Sample 1            1K  12/14/90
                    Sample 3            1K  12/14/90
                    Sample 4            1K  12/14/90
                    Standard           1K  12/14/90



                    File:

Use arrows or type file name, then press Return.
```
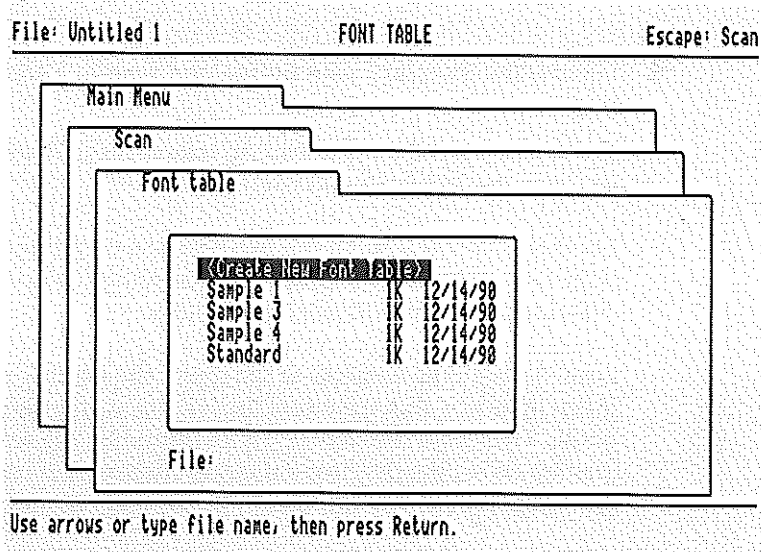
InWords will ask you to type a name for the the new font table.
Type Sample 2, then press Return.

Since this new font table is empty and doesn't contain any characters,
InWords automatically sets the **Font training** option to YES. This will
cause InWords to stop on each unrecognized character and allow you to
add it to the font table. This option should always be set to Yes when
training a new font table.

You'll also want to select the **Recognition precision** option to increase the
precision by two levels. Choose this option, then press the right arrow key
two times to move the indicator. A higher precision will help InWords
distinguish between similar looking characters during the training process.
This can be reset to the middle setting after the font has been completely
trained.

4 **Choose the Standard scan option and scan in a section of the sample page.**

To build a font table, you want to scan in a small section of the text that contains the typefaces you want train.

For this example, scan in the first and second paragraphs from the sample text on the next page, including the headings. Stop before the "Composition of the House" paragraph.

Look through the window at the top of the scanner and align the scanner's green light just above the first line of text, using the position lines as a guide. Then hold down the START button on the scanner while pulling the scanner down the page over the text. Release the button once the scanner's green light is past the last line in the second paragraph.

The scanned image of the page will appear on the screen.
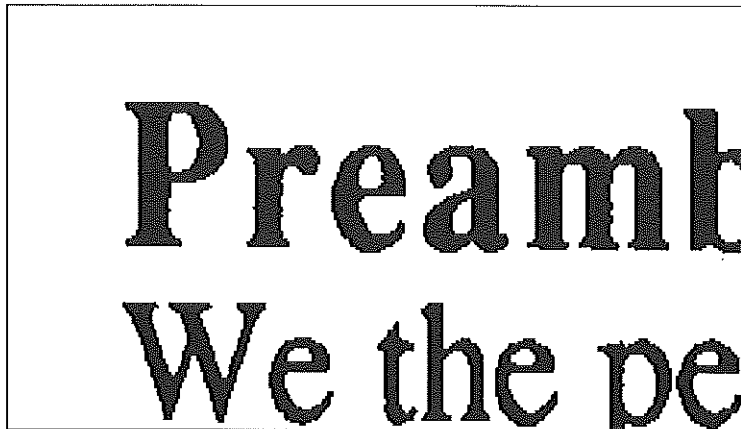
Check the alignment and clarity of the scanned image on the screen. Make sure that the letters are crisp and well formed. It's very important to have a good quality scan since the character patterns in the scan will be used as the template for recognizing text later with the font table.

If you need to make a new scan use the **Redo scan** command ⌘-R.

Align top edge of scanner below line

Preamble

We the people of the United States, in order to form a more perfect Union, establish justice, ensure domestic tranquility, provide for a common defense, promote the general welfare, and secure the blessings of liberty to ourselves and our posterity, do ordain and establish this Constitution for the United States of America.

Article 1/Legislative Branch
Congress

Sec. 1. All legislative powers herein grated shall be vested in a Congress of the United States, which shall consist of a Senate and House of Representatives.

Composition of the House

Sec. 2. clause 1. The House of Representatives shall be composed of members chosen every second year by the people of the several States, and the electors in each State shall have the qualifications requisite for electors of the most numerous branch of the State Legislature.

Qualification of Representatives

Sec. 2. clause 2. No person shall be a representative who shall not have attained to the age of twenty-five years, and been seven years a citizen of the United States, and who shall not, when elected, be an inhabitant of that State in which he shall be chosen.

Sample 2

31

5. **Press Return to enter the Recognition mode and start the training process.**

InWords will stop and highlight the first character in the scanned image, waiting for you to identify it.
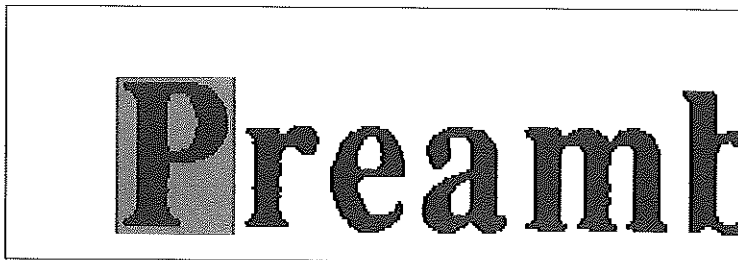
In this case, it's a "P", so type an upper case P on the keyboard (you don't need to press Return). This adds the character's pattern to the font table and enters the character in the identified text shown at the bottom of the screen. The next time InWords sees the same pattern, it will automatically identify the character.

The next character highlighted is an "r", so type a lower case r. Then the "e" will be highlighted, so type it, and so on. Continue this process for each highlighted character. As you continue training, you'll notice that InWords automatically recognizes the characters already trained.

Only train good, crisp, well formed characters. If you encounter a character that isn't well formed, you'll want to skip it without adding it to the font table. To skip a character, you can press the Space Bar to enter an unknown character symbol (~) into the text file, or you can hold down the Option key (Solid-Apple key on older Apple IIs) while typing the character, to enter the character in the text file, but without adding it to the font table. If a character has sections missing, InWords may only highlight part of the character. You should also skip these characters.

Continue training each new character in the image until InWords highlights the "rm" characters, a connected letter combination.

☞ Depending on how the Light/Dark setting is adjusted, InWords may stop on a different combination, but the same general steps will apply.

6. Press ⌘-M to train the "rm" letter combination.

In typefaces with proportional spacing, a few letter combinations may be connected or joined together, causing InWords to think that they're a single character, such as the "r" and "m" in the word "form." The **Multiple character** command ⌘-M is used to tell InWords that you need to type in more than one character.
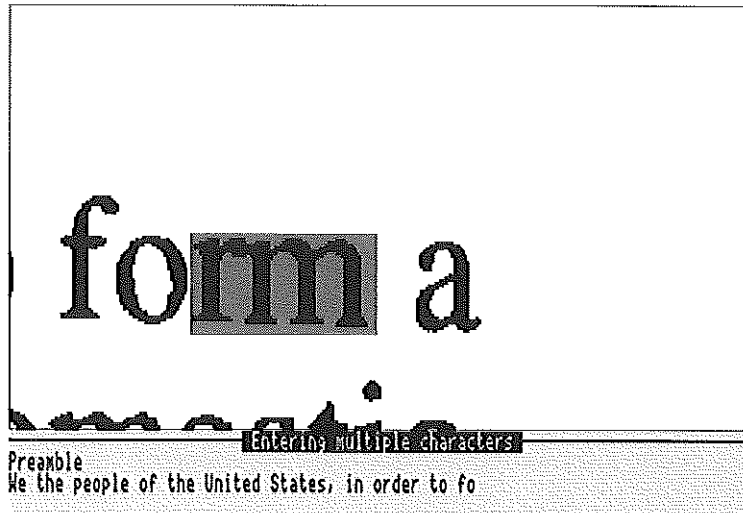
After typing ⌘-M, you may enter more than one character. Type an r and m, followed by a Return. InWords will store this as a multiple character combination in the font table, allowing it to recognize other occurrences of the same combination.

InWords may have stopped on a different combination, because of scanning variances, so type whatever characters are highlighted.

7. Train the remaining new characters.

As InWords stops on each new character, enter it from the keyboard. Remember that you don't need to press Return unless you're entering a multiple letter combination with the ⌘-M command.

You may notice that InWords will sometimes stop on a character that you already trained. This happens when the character's pattern is in some way different than the previously trained character pattern. This is normal and occurs because the scanner sometimes generates a slightly different pattern of dots, caused by the scanning angle, resolution, speed and several other factors. Typically, you'll need to train two occurrences of each character.

If InWords seems to stop on a lot of multiple-letter combinations, you may have set the scanner's brightness too dark, causing letters to run together. If this happens, you will want to re-scan the image with a lighter setting.

After InWords has identified the last character in the scanned image, it will display the recognized text in the editor. At this point you shouldn't be too concerned with checking the text for errors; that should be done after the font table is completely trained.

Examining the Font Table

Once you have finished identifying characters in the initial scan, you will have trained several characters, but many of the characters in the typeface still have not been trained. To finish the training you'll want to scan in another section of text to improve the accuracy and completeness of the new font table.

To see which characters have been trained and which ones have not, press ⌂-F from within the editor to see the font table list.

This list shows the complete set of characters, including letters, numbers and symbols. Use the up and down arrow keys to scroll through the list. The characters that you just trained will appear with a number next to them. This indicates the number of different character patterns that are in the font table for that character.

For instance, if during the training process, you trained two h's, then there would be a 2 next to the "h" in the list.

File: Untitled 1   EDIT FONT TABLE   Escape: Fonts

```
          a          2
          a1         1
          b          1
          c          3
          d          1
          e          3
          f          1
          g          1
          h          2
          i          1
          in         1
          j
          k
          l          2
```
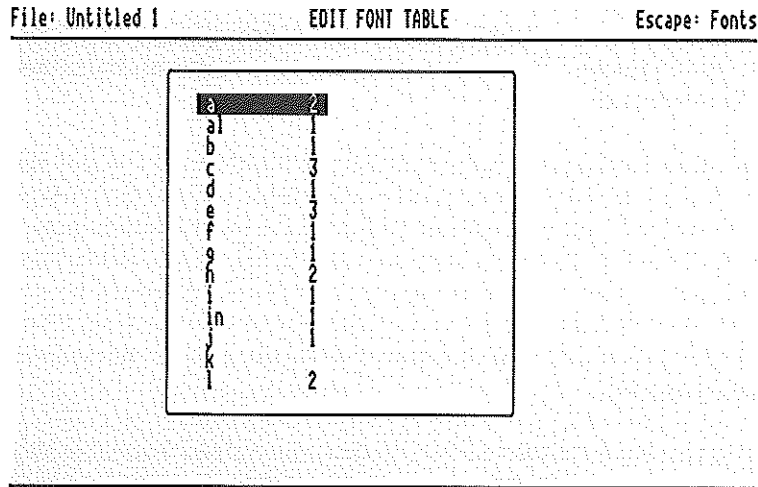
Use arrows or type character to select. Press ⏏-D to delete.

Your font table list may not look exactly like the one shown here, because of variances in the scanning and training process.

Completing the Training Process

To continue training more characters, press Esc twice to exit the font table and the editor, taking you back to the Main menu. Then, choose the **Scan** option.

Now choose **Standard scan** from the Scan menu and scan the next section of text in Sample 2, in the same manner as before. Start the scan with the "Composition of the House" paragraph in the sample.

Once again, after the newly scanned image appears on the screen, check the quality of the scan before continuing. If the clarity is acceptable, press Return to begin the recognition process.

As InWords makes its way through the scanned image, it should highlight the characters that haven't been trained yet. You'll notice that InWords will automatically identify those characters previously trained.

When a character is highlighted, press the appropriate character to train InWords for that character. Remember, you can enter multiple-characters by typing the ⌂-M command.

Continue training the characters that are highlighted. As you encounter more and more multiple-character situations, keep in mind that InWords will probably be able to identify the separate characters in these combinations on its own after more of the typeface is trained, so training for every combination is not necessary. After most of the upper and lower case letters have been trained, InWords will only stop on multiple-character combinations that it cannot determine as individual characters; these are usually characters that are very closely spaced.

Once you have completed this process, the trained font table should work very well for recognition with the typefaces used in the sample, as well as any other printed material using the same or similar typefaces. To test the new font table, set the **Font training** option to No, choose the **Standard scan** option to re-scan the sample page or use the previous scan of the second half of the page, then press Return to start the recognition. InWords should correctly identify the text in the sample and display it in the editor.

When building a font table for your own typefaces, you will perform a similar process of scanning a small section of text, training the characters, then scanning another section and training, etc. You'll want to leave the **Font training** option set to Yes, until the font has been completely trained.

Saving the Font Table

The font table you just built is only in the computer's memory, so you'll want to save it to disk, before quitting or selecting a different font table.

Return to the Main menu, then choose the **Fonts** option. From the Fonts menu, choose the **Save font table** option.

The prompt at the bottom line of the screen will show "Save as:" and the name you previously entered when you created the font table, Sample 2. Press Return to accept the name. InWords will save the font on the InWords disk.

```
File: Untitled 1              SAVE FONT TABLE              Escape: Fonts
   Main Menu
      Fonts
         Save font table

              Sample 1        1K  12/14/90
              Sample 3        1K  12/14/90
              Sample 4        1K  12/14/90
              Standard        1K  12/14/90



Save as: Sample 2
```
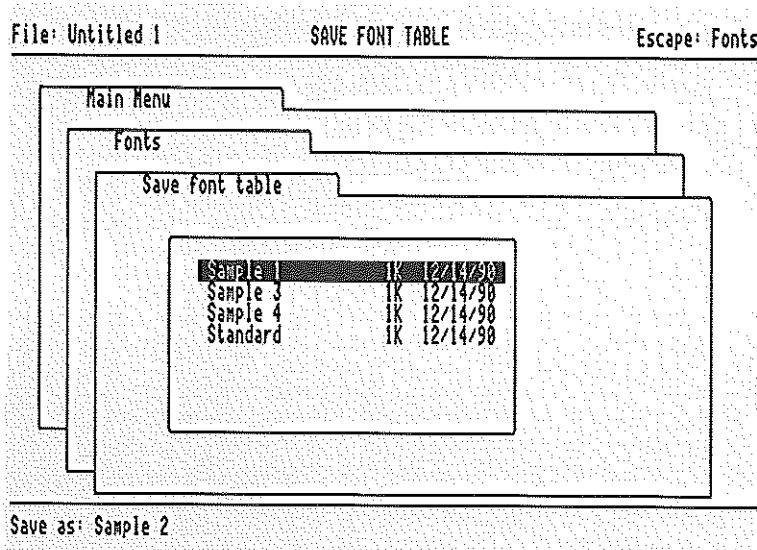
Training Tips

■ With a pre-trained font, if InWords correctly recognizes most of the text but misses a few characters, you may need to adjust the recognition precision. Use the **Recognition precision** option to lower the precision if there are a lot of unknown characters. Or increase the precision if there are many incorrectly identified characters.

■ Most typefaces are somewhat similar, so the amount of training necessary will be minimal if you start with an existing font table that works with a similar typeface and add to it, training just the different characters from the new typeface. This new font table can then be saved with a different file name.

More About Fonts

For more information about using and training fonts, see:
◆ *Recognition and Training* on page 63
◆ *Fonts* on page 76.

Scanning a Full Page

5

This chapter explains how to scan a document that is wider than the hand-held scanner, such as a book or a typewritten report. Since the scanner can only scan four inches wide, InWords provides an option for "merging" two scans into a single page.

Merge Scan

With the **Merge scan** option, you first scan the left side of the page, then the right side. InWords automatically combines the two scans into the complete page. This method will only work for documents where the text is less than 7.5 inches wide.

The steps to perform a Merge scan are very similar to the Standard scan option, except that you scan and do the recognition twice, once for the left side and once for the right.

1. **Adjust the scanner switches and Light/Dark thumbwheel.**

   ▪ Set the Letter/Photo switch on the scanner to Letter.

   ▪ Set the scanner resolution to 4 for 400 dots per inch.

   ▪ Adjust the Light/Dark thumbwheel.

   Move the thumbwheel so the middle notch is approximately centered between the light and dark position. This may need to be adjusted later after scanning if the image appears too dark or too light.

2. **Select Scan from the Main menu.**

3. **Prepare to scan by selecting a font table and setting the Font Training option.**

   ▪ The Sample 3 font table has been pre-trained for the typeface in the sample text that follows. Choose the **Font table** option to display a list of the font tables on the InWords disk. Use the up and down arrow keys to move the highlight bar over Sample 3, then press return to load it into memory.

   ▪ Set the **Font training** option to No. This will cause InWords to recognize all the text in the scan without stopping for unknown characters.

4. Choose the Merge scan option.

For the Merge scan option to work correctly you need to overlap the left and right scans by at least one-half inch. In this example there will be a much greater overlap.

The merging function improves as the amount of overlap increases, so maximize the overlap wherever possible.

5. Scan the left side of the sample document on the next page .

Align the left and top edges of the scanner's case within the position lines shown above the sample text. Look through the window on the scanner to verify that the green light is just above the first line of text.

Hold down the START button while pulling the scanner straight down the left side of the page, using a slow, steady pace. Release the button, once the scanner is past the last line of text.

The scanned image will appear on the screen. Check the alignment and clarity of the image to make sure the text is clear and well formed. If you need to re-scan the page or adjust Light/Dark brightness, use the **Redo scan** command ⌘-R to make a new scan.

Bill of R
The first

6. **Press Return to enter the Recognition mode.**

InWords begins converting the letters in the image into text and displays the recognized text on the screen.

After InWords has recognized all the characters in the left scan, it will prompt you to scan the right side of the page.

7. **Scan the right side of the sample document.**

The next two steps are the same as the last two, except you will scan the right side of the page.

Align the right edge of the scanner with the mark indicated for the right scan. This will overlap the text you scanned on the left side. Scan the right side, stopping after the last line of text .

The image of the right side scan will appear. Remember, if you need to adjust the scanner and re-scan, use the **Redo scan** command.

ents are call

tified Decen
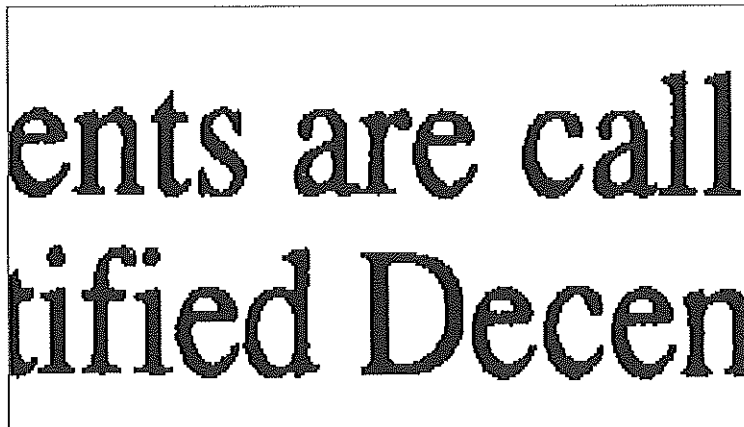
Align top edge of scanner below

< Align left edge of scanner here for LEFT scan   Align right edge of scanner here for RIGHT scan >

Bill of Rights

The first ten amendments are called the Bill of Rights. They were written by the First Congress and ratified December 15, 1791.

Amendment 1

Congress shall make no law respecting an establishment of religion, or prohibiting the free exercise thereof; or abridging the freedom of speech, or of the press; or the right of the people peaceably to assemble, and to petition the Government for a redress of grievances.

Amendment 2

A well regulated Militia, being necessary to the security of a free State, the right of the people to keep and bear Arms, shall not be infringed.

Amendment 3

No Soldier shall, in time of peace be quartered in any house, without the consent of the Owner, nor in time of war, but in a manner to be prescribed by law.

Amendment 4

The right of the people to be secure in their persons, houses, papers, and effects, against unreasonable searches and seizures, shall not be violated, and no Warrants shall issue, but upon probable cause, supported by Oath or affirmation, and particularly describing the place to be searched, and the persons or things to be seized.

Sample 3

8. **Press Return to enter the Recognition mode.**

Once InWords has recognized all the characters in the right scan, it will automatically combine the left and right text and display the whole page in the editor.

```
File: Untitled 1                    EDIT                    Escape: Main Menu
─────────────────────────────────────────────────────────────────────────────
Bill of Rights
The first ten amendments are called the Bill of Rights.  They were written by th
First Congress and ratified December 15, 1791.

Amendment 1
Congress shall make no law respecting an establishment of religion, or prohibiti
the free exercise thereof; or abridging the freedom of speech, or of the press;
the right of the people peaceably to assemble, and to petition the Government fo
a redress of grievances.

Amendment 2
A well regulated Militia, being necessary to the security of a free State, the r
of the people to keep and bear Arms, shall not be infringed.

Amendment 3
No Soldier shall, in time of peace be quartered in any house, without the consen
of the Owner, nor in time of war, but in a manner to be prescribed by law.

Amendment 4
The right of the people to be secure in their persons, houses, papers, and effec
─────────────────────────────────────────────────────────────────────────────
Type entry or use ◊ commands        Line 1  Column 1 →        36K Avail.
```

Use the editor to check the text against the original page and make any necessary corrections. Notice that the text is wider than the screen. InWords displays a right arrow at the bottom of the screen next to the column number to indicate that the current line is wider than 80 columns.

If you notice a lot of errors in the text, you may have improperly adjusted the scanner or used the wrong font table – repeat the scanning steps if necessary to get the correct text.

☞ If InWords was unable to match some of the text on the left side with the text on the right side, the unmatched right text will appear indented. In these cases, you may want to scan again to get a proper match.

For more information on the Merge scan option and the editor, see:
◆ *Scan options* on page 55.
◆ *Edit* on page 68.

Scanning
Columns

6

In this chapter you'll learn how InWords can isolate a single column of text, while ignoring the text in any other surrounding columns. This is great for scanning text from magazines, newspapers, and books that have multiple side-by-side columns of text.

Column Scan

With the previous scan options, InWords read all of the text that appeared in the scanned image. With the **Column scan** option, InWords will read just the text in the column that appears under the center of the scanner window. This is well suited for scanning columns in newspaper or magazine articles that are often next to other columns. If you were to use the Standard scan option to scan these, InWords would read the partial text in the nearby columns.

The steps that follow demonstrate how to use the Column scan option to scan the side-by-side columns of text in the following sample document. You'll notice that the sample contains two columns, surrounded by a box, which is typical of magazine and book layouts. InWords will automatically ignore the lines that make up the box.

1. **Adjust the scanner switches.**

   ■ Set the Letter/Photo switch on the scanner to Letter.

   ■ Set the scanner resolution to 3 for 300 dots per inch.

   ■ Adjust the Light/Dark thumbwheel.

   Move the thumbwheel so the middle notch is approximately centered between the light and dark positions. This may need to be adjusted later after scanning, if the image appears too dark or too light.

2. **Select Scan from the Main menu.**

3. **Select a font table and set the Font training option to No.**

   ■ Select Sample 4 as the font table, using the font table option.

   ■ Set the **Font training** option to No. The Sample 4 font is pre-trained to recognize the typeface used in this sample, so you won't need do any training.

4. **Choose the Column scan option.**

The column scan option works just like Standard scan, with the difference occurring *during* the recognition process; InWords will read only the text in the column that's below the center of the scanner.

5. **Scan the left column in the following sample document.**

Align the scanner's green light over the first line of text in the left column of the sample, "Fourscore and seven years...", then roll the scanner up so the light is just above the first line. The center of the scanner should be positioned over the column.

Hold down the START button while pulling the scanner straight down the the page. Release the button once the scanner is past the last line of text in the column.

The scanned image will appear on the screen.

```
| Foursc
| our Fathe
| continent.
```
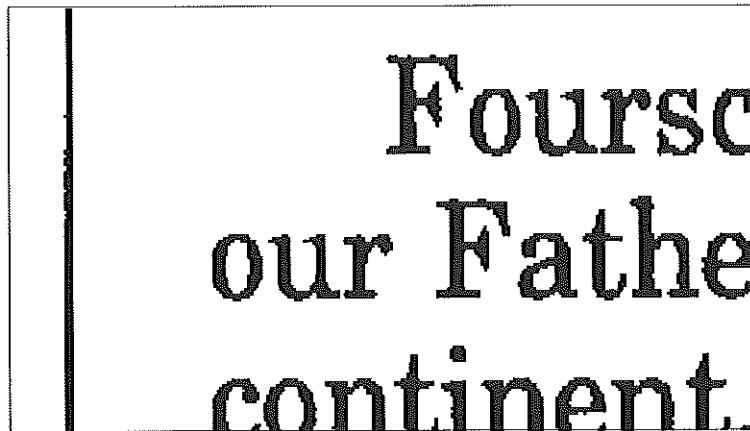
Examine the image, checking the alignment and quality of the image. If you need to re-scan the image or adjust the brightness, use the **Redo scan** command ⌘-R to make a new scan.

6. Press ⌂-Z to zoom out and see the entire scanned image.

You will see a reduced view of the scan showing the complete width of the image. Notice that part of the right column appears in the scan. InWords will ignore the text in that partial column when performing the character recognition. Only the text in the column that was under the center of the scanner will be recognized.
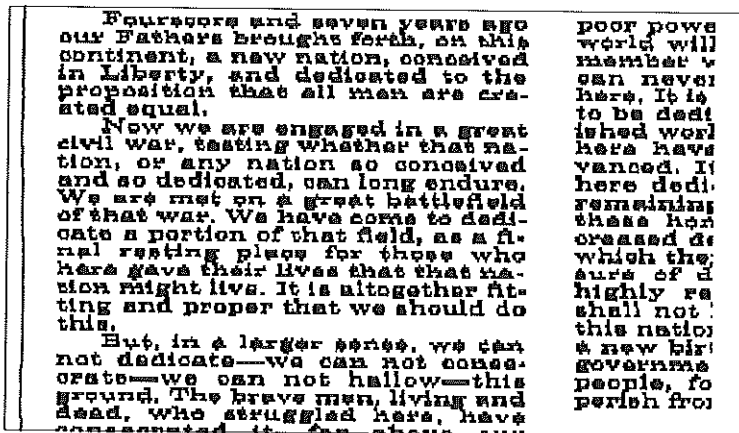
This step isn't necessary every time, but it is a good way to quickly see if you got the whole column.

7. Press Return to start the recognition process.

InWords will begin converting the letters in the left column into text and display the recognized text on the screen, one line at a time.

After InWords has recognized all the characters in the scan, it will display the text in the editor, allowing you to modify the text.

The text will appear with the same margin breaks as in the original column, however it won't be justified (aligned at both the left and right margins). You can add justification to the text later, with your word processor or desktop publishing program, if that's what you want.

As always, if you notice many unrecognized characters, check your settings and repeat the steps if necessary to get the correct text.

The Gettysburg Address November 19, 1863

Fourscore and seven years ago our Fathers brought forth, on this continent, a new nation, conceived in Liberty, and dedicated to the proposition that all men are created equal.

Now we are engaged in a great civil war, testing whether that nation, or any nation so conceived and so dedicated, can long endure. We are met on a great battlefield of that war. We have come to dedicate a portion of that field, as a final resting place for those who here gave their lives that that nation might live. It is altogether fitting and proper that we should do this.

But, in a larger sense, we can not dedicate—we can not consecrate—we can not hallow—this ground. The brave men, living and dead, who struggled here, have consecrated it, far above our poor power to add or detract. The world will little note nor long remember what we say here, but it can never forget what they did here. It is for us the living, rather, to be dedicated here to the unfinished work which they who fought here have thus far so nobly advanced. It is rather for us to be here dedicated to the great task remaining before us—that from these honored dead we take increased devotion to that cause for which they gave the last full measure of devotion—that we here highly resolve that these dead shall not have died in vain—that this nation, under God, shall have a new birth of freedom—and that government of the people, by the people, for the people, shall not perish from the earth.

Abraham Lincoln

Sample 4

For now, don't do anything with the text. Press Esc to exit the editor and return to the Main menu to get ready for scanning the next column.

8. **Return to the Scan menu and set the Append to file option to Yes**

   This will add whatever new text you scan to the text already in the editor. This is perfect for multiple-page or multi-column documents that require more than one scan.

9. **Scan the right column.**

   Scan the next column just as you did for the previous column. Make sure the center of the scanner is over the column. Stop scanning after the last line in the column.

10. **Press return to start the recognition.**

    After InWords recognizes the text in the right column, it will appear in the editor, along with the previous text from the left column.

    Now that you have the complete text, you can make any modifications you want, such as removing the hyphens at the end of line, before saving it.

```
File: Untitled 1              EDIT              Escape: Main Menu

    Fourscore and seven years ago
our Fathers brought forth, on this
continent, a new nation, conceived
in Liberty, and dedicated to the
Proposition that all men are cre-
ated equal.
    Now we are engaged in a great
civil war, testing whether that na-
tion, or any nation so conceived
and so dedicated, can long endure.
We are met on a great battlefield
of that war. We have come to dedi-
cate a portion of that field, as a fi-
nal resting place for those who
here gave their lives that that na-
tion might live. It is altogether fit-
ting and proper that we should do
this.
    But, in a larger sense, we can
not dedicate--we can not conse-

Type entry or use Q commands    Line 1  Column 1       37K Avail.
```

Removing Hyphens

Column text usually is printed in a fully justified format, which means that many of the lines will end in words that are split with a hyphen (-). Usually, you'll want to change the margins of the text in your word processor; therefore, the hyphens will be unnecessary and in the way, since the margins will be different.

To help with this situation, the InWords editor provides an option to remove the hyphens at the end of lines. Press Open-Apple-dash (Ö- --) to select the **Remove hyphens** command. InWords will ask if you wish to remove the hyphens. Answering Yes will remove all the hyphens that appear at the end of lines; all other hyphens will remain unchanged.

Where to Go Next

This chapter completes the tutorials on Using InWords. With the experience and knowledge you gained from these lessons, plus a little practice, you'll be able to scan in text from just about anything.

The Reference section that follows describes each of the InWords commands and functions in more detail. Read it to learn about the other options and commands available in InWords.

Appendix A contains information on how to import files created with InWords into other programs.

Reference

This section gives detailed descriptions of every InWords menu option and command. The section is organized by the Main menu options: Scan, Edit, Save file, Fonts, Settings and Quit. Complete steps are provided for the most common functions, such as scanning a document and converting it into text.

Scan

The Scan menu is the center of activity in InWords. From this menu you scan a page and start the recognition process, where InWords converts the text in the scanned image into an editable file. The menu also has an option that allows you to train InWords to recognize new typefaces.

Choosing **Scan** from the Main menu displays the Scan menu options.

```
File: Untitled 1                    SCAN                    Escape: Main Menu

      ┌─Main Menu─────────┐
      │   ┌─Scan───────────────────────┐
      │   │                            │
      │   │  1. Standard scan          │
      │   │  2. Merge scan             │
      │   │  3. Column scan            │
      │   │                            │
      │   │  4. Font training:     No  │
      │   │  5. Recognition precision: ▓▓▓│ │
      │   │  6. Continuous display: No  │
      │   │                            │
      │   │  7. Append to file:    No  │
      │   │                            │
      │   │  8. Font table:    Sample 1│
      │   │                            │
      └───┘                            │
          └────────────────────────────┘

Type number, or use arrows, then press Return
```
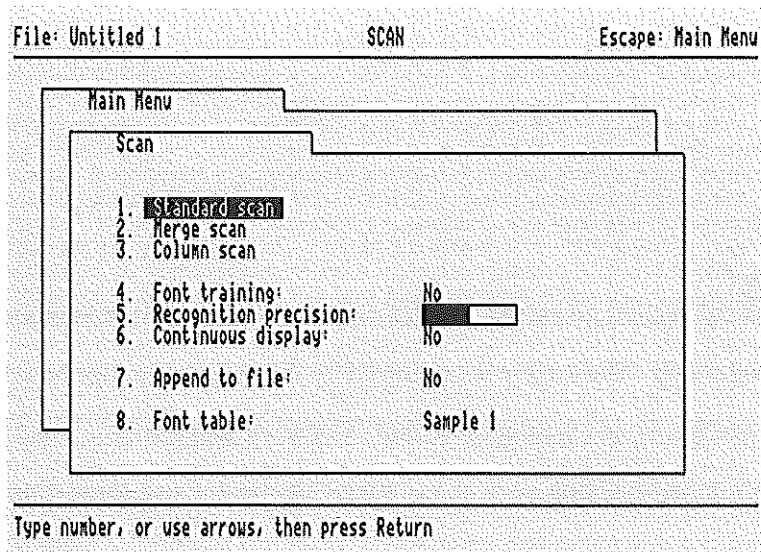
The first three options select the method of scanning a page and converting it into text. The other options control the operation of the text recognition process.

Scan Options

The following scanning methods provide the flexibility needed to scan different types of page layouts. The hand-held scanner always scans an area 4.1 inches wide, so these options provide a way of scanning text that is wider or narrower than this size.

Standard scan

This Standard scan option lets you scan text that is narrower than the width of the hand-held scanner. All text in the image will be recognized, so this option should be used only when there is no unwanted text to the left or right sides of text you wish to scan.

Merge scan

The merge scan option is used to scan documents that are wider than the scanner, like typewritten pages or books.

You first scan the left side of the page, preview the image and enter recognition mode, then scan the right side of the page, preview the image and enter the recognition mode. After completing the recognition on the right side, InWords will automatically join the two halves into a complete page.

For this process to work correctly, you must start the left and right scans at approximately the same line on the page, and overlap the left and right scans by at least 1/2 inch. The merging function improves as the amount of overlap increases, so maximize the overlap wherever possible.

Column scan

This option allows you to scan a column of text while ignoring the text to the left and right of the column. This is ideal for scanning newspaper or magazine articles that usually have multiple side-by-side columns. Only the column centered under the scanner head will be recognized.

The remaining options on the Scan menu control the text recognition process. These affect how the text in the scanned image is recognized and processed.

Font training

This option determines whether InWords will stop on unknown characters and allow training during the recognition process.

An **unknown character** is a pattern of pixels that InWords cannot correctly identify because they don't match any of the character patterns in the current font table or because the character hasn't yet been trained.

Select this option and press Return to switch between Yes and No.

Yes InWords will stop on any unrecognized character and ask you to enter the character, thus training InWords for that character.

No InWords will process the entire scan without stopping. Any unrecognized characters will be represented in the file by the unknown character symbol (~).

An unknown character may also be a character that has been trained, but isn't a close enough match to any of the character patterns stored in the font table. This can happen if the Recognition precision is set too high or if the character's pixel pattern is somehow different from the character in the font table, such as a character that isn't fully formed with missing sections.

See also:
◆ *Recognition and Training* on page 63 for more information on training.
◆ *Settings* on page 80 to pick a different unknown character symbol.

Recognition precision

This setting determines the accuracy of the recognition process. There are 10 levels of precision that specify how closely a character's image must match a character definition in the font table before InWords will identify the character.

Select this option, then use the right arrow key to increase the precision or the left arrow key to reduce the precision, then press Return.

Setting this control near the middle usually will be sufficient for accurate results. If set to a high precision, InWords will require nearly an exact match before identifying a character, causing many unrecognized characters. And a low precision may cause InWords to incorrectly identify characters, causing substitution errors.

Increase the precision when training a new typeface to add more occurrences of each character to the font table. This will improve the recognition accuracy.

Continuous display
The Continuous display option controls whether InWords will display and highlight each character in the image as it is analyzed and identified.

Yes InWords will display and highlight each character in the image.

This option is useful when you want to see what pixel patterns in the image are being considered as text characters. This will allow you to see cases where InWords mistakenly attempts to identify part of a photo or drawing as a character. It's also fun to watch.

Don't leave this option set to Yes all the time, since it considerably reduces the recognition speed.

No If this is set to No and the Font training option is set to Yes, then InWords will display and highlight only unknown characters.

Append to file
Determines if the recognized text will be placed at the end of any text previously scanned that's in the editor.

Yes InWords will append the recognized text to the text already in the editor.

No InWords will replace any text in the editor with the recognized text.

Font table
Use this option to select a different font table or create a new table.

A font table contains a description of what each character in a typeface looks like. InWords uses this information to identify the pixel patterns in an image as characters. The font tables are stored on the InWords disk or in the subdirectory (or folder) on your hard disk that contains InWords.

```
File: Untitled 1                    FONT TABLE                    Escape: Scan
┌──────────────────────────────────────────────────────────────────────┐
│  ┌─Main Menu──────────┐                                                │
│  │ ┌─Scan──────────────────┐                                           │
│  │ │ ┌─Font table──────────────┐                                       │
│  │ │ │                         │                                       │
│  │ │ │  ┌──────────────────────────────┐                              │
│  │ │ │  │ <Create New Font Table>      │                              │
│  │ │ │  │ Sample 1          1K 12/14/90│                              │
│  │ │ │  │ Sample 3          1K 12/14/90│                              │
│  │ │ │  │ Sample 4          1K 12/14/90│                              │
│  │ │ │  │ Standard          1K 12/14/90│                              │
│  │ │ │  │                              │                              │
│  │ │ │  │                              │                              │
│  │ │ │  └──────────────────────────────┘                              │
│  │ │ │     File:                                                       │
│  │ │ └─────────────────────────────────────                           │
└──────────────────────────────────────────────────────────────────────┘
Use arrows or type file name, then press Return.
```
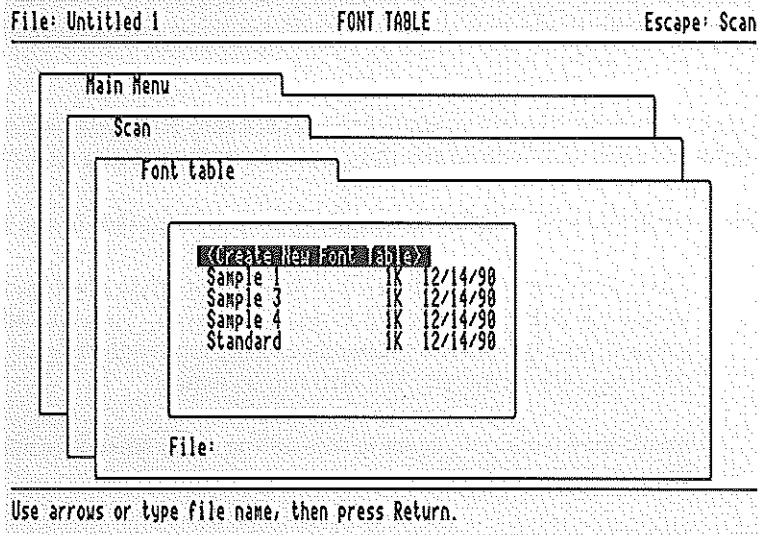
To select a font table from the list:

Use the up and down arrow keys to move the highlight bar over the font table you want, then press Return. You may also type the beginning of a table name to move the highlight bar to the first table that starts with that name.

To create a new font table for training:

Move the highlight bar over **<Create New Font Table>**, the first item in the font table list, then press Return.

InWords will ask you to enter a name for the new font table. The name must begin with a letter and can be up to 15 characters long. Since a new font table doesn't contain any character definitions, InWords will automatically set the **Font training** option to Yes.

For more information about font tables and training, see:
◆ *Recognition and Training* on page 63.
◆ *Fonts* on page 76.

Steps to Scan and Recognize Text

InWords provides three different methods of scanning and recognizing text: Standard, Merge and Column scan. For each of these methods, you go through the same basic steps: Scan, Preview, Recognition and Edit.

Scan   First, you scan in a section of a document, capturing a graphic image of the page. This creates a *picture* of the text.

Preview   InWords will display the scanned image allowing you to check the clarity and content of the scan.

Recognition   Next, InWords will begin recognizing the characters in the image based on the current font table. This creates text that can be edited.

Edit   After completing the recognition process, the recognized text will appear in the InWords editor, where you can review and modify the text before saving it.

To scan documents several pages long, perform these steps several times.

Before Scanning a Page

Before starting a new scan, make sure you have selected the correct font table for the typefaces that you will be scanning. If you are training a new font you'll need to create a new font table.

Once you have selected a font table, choose the scanning method that best applies to what you want to scan: Standard, Merge or Column scan.

InWords will then show the scan display for the selected scanning method. The display indicates the currently selected dots per inch setting (dpi) on the scanner, the amount of memory available for the scanned image, and the maximum scan length possible with the available memory in your computer. You'll be able to make longer scans with more memory. Also, if you lower the scanner resolution (dpi), the scan will require less memory.

Next, make sure the scanner's switches are set to the appropriate positions.

Scanner Switches

Letter/Photo switch   This switch, located on the left side of the scanner, must always be set to the Letter position. The other positions are for scanning graphics and photos using the software that came with the scanner.

Scanner resolution (dpi)   The scanner has four resolution settings, from 100 dpi to 400 dpi (dots per inch), represented as 1 thru 4 on the right side of the scanner. The resolution you need to use depends on the size of text you want to scan. Generally for smaller text, you need a higher resolution. Use the following as a general guide:

400 dpi	10 point and smaller
300 dpi	14 point and smaller
200 dpi	24 point and smaller
100 dpi	Larger than 24 point

☞ For most documents, 300 dpi works well. Documents with closely spaced text should be scanned at 400 dpi to prevent the letters in the text from running together.

Depending on the typeface, you may be able to use a resolution of 200 to 400 dpi, with the same recognition results. In these cases, a smaller resolution will increase the recognition speed, but may reduce the accuracy and cause connected characters. The resolution creates a trade-off between accuracy, speed and memory. Generally, pick the smallest resolution that still provides good accuracy.

Light/Dark
thumbwheel

This controls the brightness of the scanned image. You will need to vary the position of the thumbwheel depending on the the color of the paper and the color of the text you want to scan. Generally, for white paper with black text, the thumbwheel should be positioned so the middle notch is just between Light and Dark, slightly towards Dark. This may need to be adjusted after scanning if the image appears too dark or too light. The thumbwheel is VERY sensitive; a slight movement in either direction is usually enough.

Scanning a Page

After you have selected a scanning method and set the scanner switches, you can either start a new scan or use the previous scan, if you have already scanned a page.

Starting a New Scan

To begin a new scan, align the scanner so the green light highlights the first line of text you want to scan, making sure it's straight, then roll the scanner up so the light is just above the line. Hold down the START button on the left side of the scanner while pulling the scanner straight down the page, using a slow, steady pace.

As you move the scanner, InWords provides an audio feedback that will help you keep a constant scan speed. The light on top of the scanner indicates the optimal scanning speed. When it flashes, you need to slow down. When the light goes out, you're moving too fast and missing portions of the original document. A good target speed is about one inch per second.

You can't move the scanner too slowly, but if you scan the image too fast, the characters will appear compressed, which may cause recognition problems.

Once the scanner head is past the last line of text, release the button. The scanned image will appear on the screen.

Using a Previously Scanned Image

If you wish to use the previously scanned image without scanning a new image, press Return at the scan display screen. This is helpful if InWords had trouble recognizing the characters and you want to try again with a different font table or precision setting.

Previewing the Scanned Image

After you scan a page, InWords displays the graphic image created by the scanner. This allows you to check the clarity and content of the scan before starting the text recognition process. Since the scanner creates hundreds of pixels for every inch scanned, the page will appear greatly magnified, with only a portion of it on the screen at one time.

Check the image to make sure that the text isn't cut off at the edges or at the top or bottom. Also check the **skew**, or slant, of the scan. InWords will work with a slightly skewed image, but try to keep the scanner as straight as possible when scanning.

Make sure that the text characters in the image are complete and easy to read. If they are not fully formed and have sections missing, the Light/Dark control was adjusted too light. If the letters are joined together or have filled in sections, the setting was too dark. If necessary, adjust the setting and re-scan the page .

See page 21 for examples of good and bad scans.

Preview Commands

While previewing the image, you may use the following commands:

Return   Press Return to accept the image and start the recognition process.

Esc   Press Esc to cancel the scan and return to the menu.

Scrolling with Arrow keys   Use the Up, Down, Left and Right Arrow keys to move around within the image. To move a greater distance, hold down the Open-Apple key while pressing one of the Arrow keys.

Scrolling with
♂-1 thru ♂-9

Open-Apple-1 thru 9 move vertically through the image. Each number represents a proportional distance from the top of the image, with Open-Apple-1 at the the top of the image, Open-Apple 5 at the middle, and Open-Apple-9 at the bottom.

Zoom ♂-Z

To see a reduced view that shows the entire width of the scanned image type Open-Apple-Z. Typing another Open-Apple-Z will return to the full-size display.

Redo scan ♂-R

If you don't like what you see and want to re-scan the image, type the Open-Apple-R command to make a new scan.

Recognition and Training

InWords begins the recognition process by analyzing the scanned image, looking for the text in the image. This is known as **Page Analysis**. During this process, InWords will *attempt* to find only the text, while ignoring any photos, graphic pictures, or ruled lines that appear in the image.

Once the page analysis is complete, the recognition process starts. InWords looks for groups of pixels that appear to be characters. When it finds a pattern that could be a character, InWords compares this pattern against the character definitions stored in the current font table. If a match is found, the appropriate ASCII character is entered into the editor file. This process continues for each character in the image. When completed, you'll have a file that contains all of the recognized text, that can be modified and saved for use in other programs.

The text recognition process is either automatic or interactive, depending on how the **Font training** option is set.

If the **Font training** option is set to **No**, InWords will process the entire scan without stopping. The identified characters will appear on the screen one line at a time, until the recognition is complete. Normally you will want this option set to No, unless you are training InWords to recognize a new typeface.

Font Training

With the **Font training** option set to **Yes**, InWords will stop on any character pattern that it cannot identify and ask you to type in the corresponding character. This "teaches" InWords what the character looks like, so the next time it sees the same character pattern, it will automatically recognize the character. The training process is highly interactive and you will notice that InWords will automatically identify more and more characters as you train each letter, number and symbol.

When you train a character, InWords stores a description of that character's pattern as a **character definition** in the current font table. Usually the scanner will not create *exactly* the same pixel pattern for each character, so you may need to train more than one definition of each character. For instance, you may need to train several variations of an uppercase "A", before InWords will correctly identify all "A's" in the scanned image. Generally once you have trained two or three variations of a character's pattern, InWords will be able to identify all occurrences of that character. This is dependent on the setting of the **Recognition precision** option. A higher precision will require more training, but will also increase the recognition accuracy, since you'll will be training more occurrences of each letter.

Training More than One Typeface

Several different typestyles can be trained in a single font table. For instance, if a document contains italicized letters and boldface headings in different typeface, you'll need to train those letters as additional characters in the font table. However, in most cases, many of the characters will look similar enough to the non-italic or non-bold letters already trained that you won't need to train the entire character set for each typeface.

Training Connected Characters

To InWords, connected characters look like a single character until you teach it to recognize the separate characters that make up these combinations.

When InWords highlights more than one character during the training process, type the ⌂-M command to tell it you want to train a multiple character. Type the

highlighted characters, followed by a Return. The character patterns will be stored as a **multiple character definition** in the current font table.

Once you have trained most of the letters in a typeface, InWords will be able to automatically determine the individual characters in these connected groups, but in some cases where the letters are very close with overlapping sections, InWords will only be able to identify the characters as a multiple character combination.

InWords can read both monospaced type and proportional type.

In a **monospaced** typeface each letter, number and symbol occupies the same amount of space on the line. Most typewritten documents are monospaced.

The characters in a **proportionally spaced** typeface have different spacing based on the size of each character. Virtually all books and magazines are printed with proportionally spaced type.

```
This is an example of a monospaced font.
```
This is an example of a proportionally spaced font.

In certain proportional typefaces, the letters in a word may be very closely spaced or joined together, causing a connected character.

fi, fl, or rm

Some connected characters are **ligatures** , intentional letter pairs, such as the "fi" above. These are considered as a single character.

Connected characters may also be the result of setting the scanner contrast too dark. If you notice a lot of connected characters in the scanned image, re-scan the image with a lighter setting.

☞ **Symbol Training Tip**
As you're training a font, you may come across a symbol that doesn't have an equivalent symbol on the keyboard, such as ¢ © ™. These can be trained as a multiple character combination. For instance, train ¢ as the word "cents", or © as (C). Then when InWords recognizes the symbol, it will enter the word or characters you trained it as. There are many interesting possibilities for this feature.

Training Commands

During font training the following commands are available when InWords highlights a character and waits for you to enter it.

Enter unknown character

Space bar

Press the space bar to skip the highlighted character. This enters an unknown character symbol into the text file. You may want to skip a character because it has already been trained or because you don't want to train a bad character.

Skip character

⌂-Space bar

Open-Apple-Space bar will cause InWords to skip the highlighted character without entering anything in the text file. This is handy when InWords incorrectly attempts to identify a speck or part of a photo or drawing as text.

Skip line

⌂-Return

Open-Apple-Return will skip the remaining character on the current line of text and move down to the next line. This is handy when InWords incorrectly attempts to identify a photo or graphic as text.

Don't train character

Option key

Holding down the Option key (or the Solid-Apple key ● on older Apple IIs) while typing a character, enters the character in the scanned text file, but doesn't add the character to the font table. Use this in cases where the character's pattern isn't fully formed, broken or filled-in. You don't want to train bad characters since they will lessen the recognition accuracy of the font table.

Edit font table

⌂-F

The command will display a list of the characters in the font table, showing which characters have been trained. Use this to see which characters still need to be trained.

See *Fonts* on page 76 for more information about Editing font tables.

Enter multiple characters

Ć-M

When InWords highlights more than one character, type Open-Apple-M to enter more than one character. Type in the characters, then press Return. You may enter up to 12 characters. This will be added to the font table as a multiple-character combination.

See *Training Connected Characters* on page 64.

Stop recognition

Esc

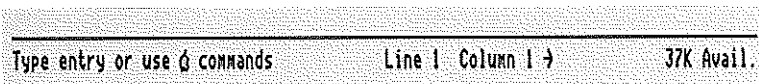Esc may be pressed at any time during the recognition process to stop the recognition process and go to the editor.

Edit

The **Edit** option will enter the InWords editor. Normally after text has been scanned and recognized, InWords will automatically enter the editor.

Using the built-in features of the editor, you will find it easy to make any necessary corrections or adjustments to the recognized text prior to saving it to a disk file for use in other programs.

Using the Editor

The editor displays the recognized text with the same margin and line breaks as in the original document. The margins and other aspects of the text, such as character size and style, can be adjusted within the program you intend to use the text, such as your word processor.

For lines greater than 80 characters wide, the editor cannot display the complete line, so an indicator arrow will be displayed at the bottom of the screen to the right of the column number.

```
Type entry or use Ó commands        Line 1  Column 1 →        37K Avail.
```

This is to remind you that there is text beyond the boundaries of the screen. To see the text past the right edge of the screen, use the Ó-Right Arrow command or Ó-> (or Ó-. Open-Apple-Period) command to move the cursor to the end of the line.

Editor Document Length

The editor allows a maximum document length of 38K or about 20 pages of text. This should be more than enough for a single scanning session. Documents that are longer than this can be scanned and saved as separate files, which then can be combined within your word processor, etc.

Even if your computer has a lot of memory, the maximum document size in the editor will still be 38K, because the extra memory in your system is used for the scanned images, which require a large amount of memory.

Edit commands

You may use the following commands in the editor.

Move cursor

Left, Right, Up and Down Arrow keys

The Left and Right Arrow keys move the cursor one character to the left or right. The Up and Down Arrows move up or down one line.

Move to beginning or end of line

Ö-< and Ö->

Open-Apple-< or Open-Apple-> move the cursor to the beginning or end of the current line. Alternatively, the unshifted version of the same keys, Ö-, and Ö-. will perform the same functions.

Move to previous or next word

Ö-Left arrow and Ö-Right arrow

Open-Apple-Left Arrow and Open-Apple-Right Arrow move the cursor to the previous or next word.

Move up or down one screen

Ö-Up Arrow and Ö-Down Arrow

Open-Apple-Up Arrow and Open-Apple-Down Arrow move the cursor to the top or bottom of the current screen. If the cursor is already positioned at the top or bottom of the screen, these commands will move the cursor one screen backwards or forwards.

Scrolling

Ö-1 thru Ö-9

Open-Apple-1 thru 9 move vertically through the text. Each number represents a proportional distance from the first line in the text, with Open-Apple-1 at the the top, Open-Apple-5 at the middle, and Open-Apple-9 at the bottom.

Delete character

Delete

Delete character to left of the cursor.

Insert carriage return

Return

Return will insert a carriage return into the text at the current cursor position. Use this command to break a line of text into two lines or to insert additional blank lines between lines of text.

Insert tab

Tab

Tab will insert a tab at the cursor position. The tab will appear on the screen as a right arrow symbol.

The editor also provides a command for automating the process of inserting tabs between items in a table, see *Replace spaces with tabs*.

Before inserting tabs, make sure the program that you're going to use the text in can correctly read the tab characters. When importing the text into a data base or spreadsheet program, the tab character will act as a category or cell separator.

Delete lines

Ö-D

Open-Apple-D deletes lines of text. Press the Open-Apple-D and use the up or down arrow keys to expand the highlighted area to include the text lines you want deleted. Press Return to delete the highlighted text.

Switch between insert and overstrike cursor

Ö-E

Open-Apple-E toggles between the insert and overstrike typing modes. When in the insert mode, the cursor is a flashing underline character. Typing characters while in this mode will cause all characters beyond the current position to be pushed forward as the new characters are inserted. When in the overstrike mode, the cursor is a flashing box character. Any characters typed while in this mode will replace the previous characters.

Edit font table

Ö-F

This command will display a list of the characters in the font table, showing which characters have been trained. Use this to see which characters still need to be trained or to remove characters from the font table.

See *Fonts* on page 76 for more information about Editing font tables.

Save text   ⌘-S

Save the text from the editor to a disk file. If you haven't previously selected a file format and saved the file, this will display the Save menu with the various save options. If you have already saved the file, this will save the text using the previous name and format.

Display recognition   ⌘-R
summary

The summary shows the number of characters, words and lines in the recognized text, the number of unknown characters that InWords couldn't identify, the number of characters added to the font table, and the memory used for the scanned image.

Find unknown   ⌘-U
character

Open-Apple-U finds the next occurrence of the unknown character symbol (~) in the text. The unknown character symbol is a marker used by InWords to indicate that a certain character in the scanned image could not be identified. Use this command to quickly find and replace any unknown character symbols with the correct character.

Clear all text in   ⌘-X
editor

Use this option to erase all the text in the editor. Normally, with the **Append to file** option set to No, InWords will automatically clear any text in the editor before each new scan.

Delete to end of line   ⌘-Y

Open-Apple-Y deletes the text from the current cursor position to the end of the line. Control-Y will also perform this function.

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Special Commands

Remove hyphens   ⌕- −

This command will remove any hyphens (-) that appear at the end of lines.

Hyphens frequently appear at the end of lines in text that is printed in a justified column format, such as newspaper columns.

Usually, you'll want to change the margins of the text in your word processor, so the hyphens will be unnecessary and in the way, since the margins will be different. To help with this situation, the InWords editor provides this option to remove the hyphens at the end of lines.

After entering this command, InWords will ask if you wish to remove the hyphens. Answering Yes will remove all the hyphens that appear at the end of lines; all other hyphens will remain unchanged.

Replace spaces with tabs   ⌕-Tab

Open-Apple-Tab replaces a specified number of spaces with a tab character. Upon pressing Open-Apple-Tab, InWords will prompt for the number of spaces that should be replaced with a tab. InWords will then automatically replace all instances of the specified number of spaces with a tab.

This function is very useful when scanned text is to be imported into a data base or spreadsheet. By using the command, spaces between items in a table or list will be converted into a tab character. This tab character can then be used as a field or cell separator when the file is imported into a data base or spreadsheet program.

Save file

The Save file menu options allow you to save the recognized text from the editor to a file on disk. Once saved, the text can be used in most any of your programs that work with words or numbers, such as a word processor, spreadsheet, data base, telecommunications, or desktop publishing program.
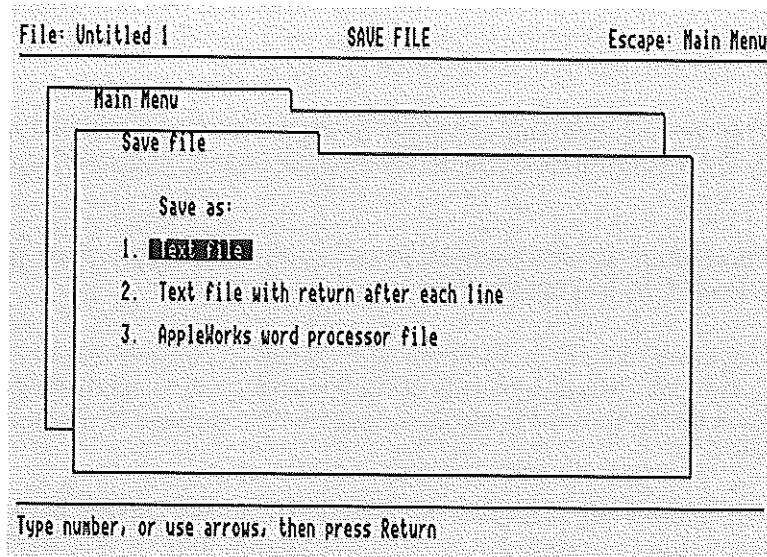
```
File: Untitled 1                    SAVE FILE                    Escape: Main Menu

        Main Menu
          Save file

              Save as:

            1. Text file

            2. Text file with return after each line

            3. AppleWorks word processor file




     Type number, or use arrows, then press Return
```

File Formats

InWords lets you save text in any of three different file formats: AppleWorks Word Processor, Text file, and Text file with returns. These files can then be imported into most programs

The format you choose depends on which program you want to use the text in and how that program reads files. The most common format is a Text file which you can import into almost any program.

Save file options

Text file

The Text file option will save the recognized text as standard ASCII text in a paragraph format. The saved text will only have returns after paragraphs; it will not have carriage returns after each line of text.

Use this option if you wish to use the recognized text in a word processor, desktop publishing program, etc. and want the scanned text to assume new margin settings as defined within that program.

This method of saving would not be appropriate for such circumstances as tables or lists of information where retaining the original format is desirable.

Text file with return after each line

This option saves the recognized text as standard ASCII text with a carriage return at the end of each line.

Use this option if you want to retain the layout characteristics of the original document. This is especially useful for saving tables and lists of information. Each line of scanned text will be saved with a carriage return at the end of each line.

When importing these files into a data base or spreadsheet, the return after each line will act as a record, row or field separator. If the text is organized in a table format with different columns, you may want to add tabs between the items in each column. To help with this process, the InWords editor provides an editor option that will convert a series of spaces into tabs.

AppleWorks word processor file

This option saves the recognized text in the Appleworks word processor file format.

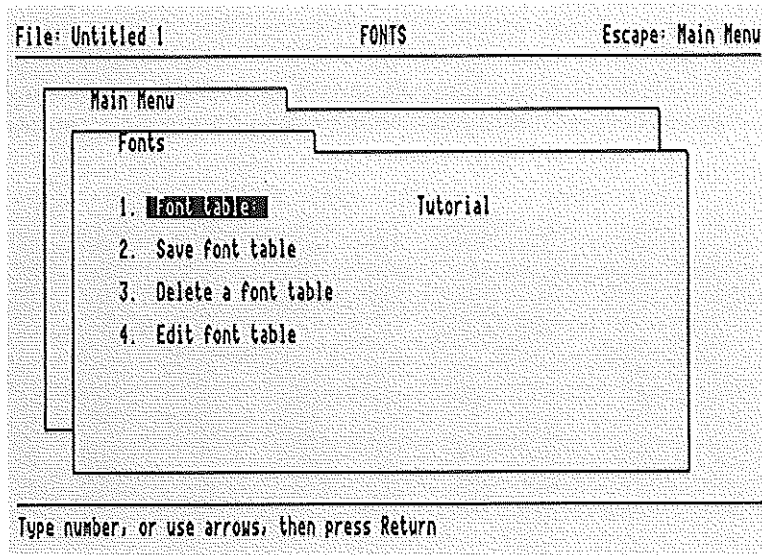Use this option if you want to load the scanned text directly into AppleWorks or AppleWorks GS.

Note: AppleWorks 3.0 supports tabs and earlier versions of AppleWorks do not. Therefore, if you have inserted tabs into the text, the file will be saved in an AppleWorks 3.0 format; otherwise, it will be saved in a format that can be used by any version of AppleWorks.

See also:
♦ *Edit* to learn how to insert tabs and convert spaces to tabs, on page 70 .
♦ Appendix A for information on importing files in other programs.

Fonts

The Fonts menu has several options for working with InWords font tables.

```
File: Untitled 1                    FONTS              Escape: Main Menu

   Main Menu
     Fonts

       1. Font table              Tutorial
       2. Save font table
       3. Delete a font table
       4. Edit font table




 Type number, or use arrows, then press Return
```

The currently selected font table is shown next to the first option.

Font tables

To recognize a character, InWords compares the characters in a scanned image against a table that describes what each character looks like, based on several attributes. When an appropriate match is found, InWords identifies a character. These attributes are stored in a **font table**, which contains descriptions for each letter, number or symbol in a typeface.

A single font table can contain descriptions for more than one typeface, allowing InWords to recognize several different typefaces in a single scan, such as headings and body text.

Font tables are stored as separate files on the InWords disk, with a unique file type that identifies them as OCR Font Tables.

Unlike the fonts used by the Apple IIGS system software and other applications that print or display documents on the screen, InWords' font tables are not bit-maps of the individual characters; they can't be used as GS-style fonts, and GS-style fonts can't be used as InWords font tables.

☞ **Hard disk users:** If you have InWords installed in a subdirectory (or folder) on your hard disk, the InWords font tables must be located in the same subdirectory.

Pre-Trained Font tables

Several pre-trained font tables are supplied on the InWords disk for recognizing common typefaces, such as those used in national magazines and newspapers, laser printer fonts, etc.

The Standard font table will recognize many common typefaces, so it can be used for general scanning. The other tables are for specific publications or typefaces, as indicated by the font table names.

If the pre-trained tables don't work for the typeface you want to scan, you'll need to build a new font table and train it to recognize the typeface.

Fonts menu options

Font table

Choose this option to select an existing font table or create a new table.

This option is the same as the **Font table** option on the Scan menu.

See *Font table* in the Scan section on page 57 for more information on this option.

Save font table

This option saves any changes you have made to a font table to the font table file on the disk. New characters you have trained will be added to the file, and characters removed from the table will be permanently removed from the file.

Delete a font table

Use this option to remove font table files that you no longer need from the InWords disk.

After choosing this option, InWords will display a list of the font tables on the InWords disk or the subdirectory (or folder) where you have the font tables. Use the Up and Down Arrow keys to move through the list, then press Return to delete the highlighted font table file.

InWords will ask if you wish to delete the file. Answering Yes will PERMANENTLY delete the file on the disk.

Edit font table

This option allows you to remove character definitions from the current font table. This is useful if you inadvertently type in the wrong character during the training process and want to remove the incorrect definition from the table.

A list of the characters in the font table is shown. Select a character by using the Arrow keys to move through the list or by typing the character. If the font table has any multiple-character definitions they will appear in the list also.

Use ⌘-D to remove the highlighted character's definition from the table. If there is more than one definition for the character, the definitions will be removed from the most recently added definition to the first definition.

Any changes made to the font table are only temporary until the file is saved to disk.

Correcting Mis-Trained Characters

If you notice that InWords consistently identifies a character incorrectly, then that character may have been defined incorrectly during the font training process.

For example, InWords has recognized a paragraph of text and the word "and" has consistently been misspelled as "znd". This would indicate that the character "a" had been mis-trained as the character "z".

To remedy this situation, choose the **Edit font table** option, and use the ⌘-D command to remove ALL of the character definitions for "z" from the current font table. You may need to press ⌘-D several times to delete all the definitions for the character.
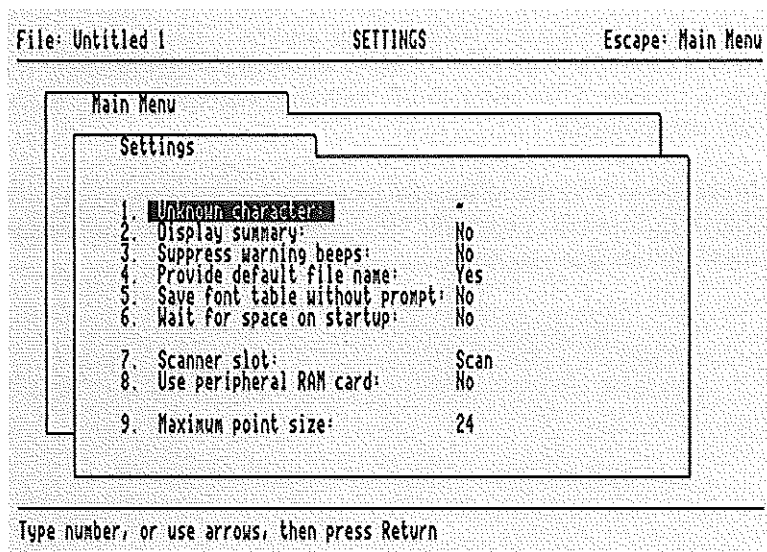
Return to the Scan menu, and set the **Font training** option to Yes. Next, re-use the previous scan or re-scan the text, then start the recognition process and wait for InWords to stop and highlight "a" and "z." To re-train these characters correctly, type an a on the keyboard when "a" is highlighted on the screen, and type a z when "z" is highlighted. InWords will then correctly identify a's and z's from that point on.

Make sure to save the re-trained font table before changing to a different font table or quitting the program. Of course, InWords will prompt you to remind you to do this if you forget.

Settings

The Settings menu has options that allow you to customize various aspects of the InWords interface and configure InWords for your hardware setup.

```
File: Untitled 1              SETTINGS              Escape: Main Menu

   ┌─ Main Menu ──────────┐
   │ ┌─ Settings ──────────┐
   │ │
   │ │  1. Unknown character:      *
   │ │  2. Display summary:        No
   │ │  3. Suppress warning beeps: No
   │ │  4. Provide default file name:  Yes
   │ │  5. Save font table without prompt: No
   │ │  6. Wait for space on startup:  No
   │ │
   │ │  7. Scanner slot:           Scan
   │ │  8. Use peripheral RAM card: No
   │ │
   │ │  9. Maximum point size:     24
   │ │
   └─┘

Type number, or use arrows, then press Return
```

Recognition Settings

Unknown character   This option allows you to change the symbol that InWords uses for marking any characters that it could not identify during the recognition process.

After selecting this option, you will be prompted for a new "unknown character" at the bottom of the screen. Simply type in the character that you would like InWords to use.

You'll want to pick a character that is easy to spot and find using your word processor's search function. The character should also be one that is not ignored by your word processor's spelling checker.

The default setting for the unknown character symbol is a tilde (~).

Maximum point size

This option should be set to the maximum size, in points, of characters that InWords should consider as a valid character. Remember, 72 point is text that is approximately 1 inch high, so if typically you're scanning text that is no larger than 1/2 inch high, set this setting to 36 points or less. This will improve InWords ability to ignore objects that would otherwise be considered as characters.

Display summary

If this option is set to **Yes**, InWords will display a recognition summary after completing the recognition of the current scan. The summary shows the number of characters, words, and lines identified during the recognition process. It also shows the number of unknown characters, and the number of characters added to the font table (if you trained any characters), and the memory required for the · scanned image.

This is the same summary that is available with the ⌘-R command from within the editor.

Interface Settings

Suppress warning beeps

This option will allow you to suppress all warning beeps while using InWords. If this option is set to No, you will hear warning beeps. If it is set to Yes, all beeps will be suppressed.

Provide default file name

Yes

With this option set to Yes, InWords will automatically provide a default file name whenever you save the text in the InWords' editor. Of course, you may change this name before actually saving the text to disk.

No

If this option is set to No, a file name will not be provided and you will be required to enter a file name before saving the text.

Save font table without prompt

No

InWords will always ask you if you wish to save the current font table in memory to disk, before allowing you to create a new table or select a different table. This prompt will only appear if changes have been made to the table.

Yes

When this option is set to Yes, InWords will save any changes to the font table automatically without prompting you.

Wait for space on startup

When this option is set to **Yes**, InWords will display the title screen, then wait for you to press the Space bar before going to the Main menu.

Hardware settings

Scanner slot

You may select **Scan** or a slot number 1 thru **7**.

Typically, with this option set to **Scan**, InWords will search through the slots in your computer to find where your scanner card is currently installed.

A slot number should be used in cases where InWords cannot find the slot containing the scanner card because of another card installed in the computer that appears to InWords as the scanner card.

Use peripheral RAM card

If this option is set to **Yes**, InWords will use the memory on your peripheral RAM card for the scanned images. The images require a lot of memory and the more memory you have the longer the possible scan.

A peripheral RAM card is a separate card installed in your computer, such as the Applied Engineering RamFactor™ or Apple Memory Expansion Card card. It is not a GS RAM card or Applied Engineering RamWorks™ – these are used automatically by InWords.

Quit

The Quit option will exit InWords and return to the program selector or GS/OS Finder.

If you have unsaved text in the editor, InWords will ask if you wish to save it before exiting. Also, if you have made any changes to the current font table, such as training new characters or removing characters, InWords will ask you if you wish to save it.

Importing Files Into Popular Applications

A
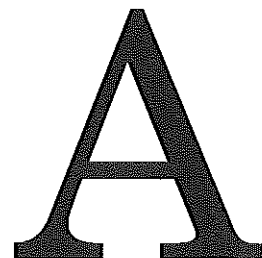
This section describes how to import files saved with InWords into other popular programs. Step-by-step instructions help you get started using your scanned text in these programs.

General Information on File Formats

InWords lets you save text in any of three different file formats: AppleWorks Word Processor, Text file, and Text file with returns. These files can then be imported into most programs that work with words or numbers, such as word processors, desktop publishing, spreadsheet, data base, or telecommunications programs.

To create word processor files, you'll usually want to save the text as an AppleWorks word processor file or as a Text file. These files will only have returns after paragraphs.

To create data base or spreadsheet files, you'll want to save the text as a Text file with returns. These files will have a carriage return after each line that will act as a record, row or field separator. If the text is organized in a table format with different columns, you may want to add tabs between the items in each column. The tabs will act as a field or cell separator. To help with this process, the InWords editor provides an option that will convert a series of spaces into a tab.

Importing into Apple II Applications

The following describes the steps necessary to import files into the most popular Apple II programs. This section is organized alphabetically by application name. Files created by InWords can be used in many other applications besides the ones listed here.

The steps given here are from the viewpoint of the program that's retrieving or importing the file. For more specific information regarding importing and topics not covered here, please refer to the application's documentation.

AppleWorks 3.0

Word processor

InWords can create and save AppleWorks® word processor files directly. Therefore, loading files generated by InWords is as easy as loading any word processor file created by AppleWorks.

If you are not familiar with how to open a word processor file with AppleWorks, the following instructions should be helpful.

1. From the Main Menu of AppleWorks, select **Add files to the Desktop**, then press Return.

2. From the Add Files menu, select **The current disk**, then press Return.

    Note: If the file was not saved to the same location indicated by **The current disk** option, you will need to select **A different disk** before selecting **The current disk**. This will allow you set the proper path to the location of the file.

3. AppleWorks displays a list of files on the current disk and path from which you can select a file. Select the word processor file you want, then press Return.

    Appleworks adds the file to the desktop and displays it as a Word Processor document.

4. Select the word processor printer options menu by pressing ⌂-O, then change the left and right margins to the desired width.

    This will re-format the file with the new margins.

Data base

You can create an AppleWorks data base file from an InWords text file by following the steps listed below.

1. From the Main Menu, select **Add files to the Desktop**, then press Return.

2. From the Add Files menu, select **Data Base**, then press Return.

    AppleWorks gives you the choice of creating a file **From scratch, From a text (ASCII) file**, or **From a DIF (TM) file**.

3. Select **From a text (ASCII) file**, then press Return. AppleWorks displays a list of files on the current disk and path from which you can select a text file.

4. Select the InWords text file you want to import, then press Return.

5. Select the way you want AppleWorks to interpret the tab and return characters in the text file, then press Return.

   AppleWorks can import ASCII text files that have: (1) a tab character between each category, and a return at the end of each record; and (2) a return after each category only.

   If you have scanned in a table of information and used the InWords editor "Spaces to tabs" command (Ö-Tab) to convert spaces between items in the table to tabs, you will want to select **Tabs between categories, Returns between records.** If you choose this option, AppleWorks adds the file to the desktop.

   If you scanned in a list of grouped items such as an address list consisting of a name line, address line, etc., select **Return after each category.** AppleWorks will then ask "How many categories? (1-30)." Type in the number of text lines per group to indicate how many categories there are in the text file, then press Return. AppleWorks adds the file to the desktop.

6. Type a new name for the file, then press Return.

   30 Categories Maximum: AppleWorks can import data bases that have up to 30 categories. If the text you're importing has more than 30 categories, AppleWorks imports the categories up to and including 30, but ignores any categories after 30.

Spreadsheet

You can create an AppleWorks spreadsheet file from an InWords text file by using the following steps.

1. Load the text file you created with InWords into an AppleWorks data base as described in the AppleWorks data base section.

2. Once the text file is loaded into the data base properly, copy all the records of the resulting data base to the clipboard. To do this, press Ö-C, then select **To**

clipboard when AppleWorks asks "Copy Text?" Highlight the entire contents of the data base and then press Return.

3. From the Main Menu of AppleWorks, select **Add files to the Desktop,** then press Return.

4. From the Add Files menu, select **Spreadsheet,** then press Return. AppleWorks gives you the choice of creating a file **From scratch,** or **From a DIF (TM) file.**

5. Select **From scratch,** then press Return.

6. Type a new name for the file, then press Return.

7. Finally, copy the information previously saved to the clipboard from the data base. Do this by pressing Ġ-C, then, when AppleWorks asks "Copy Text?", select **From clipboard.**

   The text created and saved with InWords will then appear within the spreadsheet.

AppleWorks GS

Word processor

InWords can create and save AppleWorks word processor files directly. Therefore, loading files generated by InWords is as easy as loading any word processor file created by AppleWorks GS®.

The following steps describe how to load a word processor file.

1. Choose **Open** from the **File** menu or press Ġ-O. The "Open which file" dialog box will appear.

2. Select the word processor icon of the dialog box and then locate and select the file created and saved by InWords.

Appleworks GS will display the file as a Word Processor document and will use its standard margins and other settings.

Data base

1. Choose **New** from the **File** menu or press ⌂-N. The "Select type of new file" dialog box will appear.

2. Select the data base icon of the dialog box and then select **New**.

3. Define fields for text.

4. Choose **Import File...** from the File menu . The "Import which file" dialog box will appear.

5. Select the text file. The "Define field and record separators" dialog box will appear.

6. Select the way you want AppleWorks GS to interpret the tab and return characters in the text file, then press Return.

    AppleWorks GS can import ASCII text files that have: (1) tabs between fields, returns between records; (2) spaces between fields, returns between records; and (3) returns between fields, user specified number of fields per record

    If you have scanned in a table of information and used the InWords "Spaces to tabs" command to convert spaces between items in the table to tabs, you'll want to select **tabs between fields, returns between records.**

    If you scanned in a list of grouped items such as an address list consisting of a name line, address line, etc., select **returns between fields, user specified number of fields per record.** You will also need to indicate how many fields there are in each record.

    Appleworks GS will load the file as a data base document.

Spreadsheet

1. Choose **New** from the File menu or press ⌨-N. The "Select type of new file" dialog box will appear.

2. Select the spreadsheet icon of the dialog box and then select **New**.

3. Choose **Import file...** from the File menu and the "Import which file" dialog box will appear.

4. Select the text file. The "Define row and column separators" dialog box will appear.

5. Select the way you want AppleWorks GS to interpret the tab and return characters in the text file, then press Return.

   AppleWorks GS can import ASCII text files that have: (1) tab between columns, returns between rows; (2) spaces between columns, returns between rows; and (3) returns between columns, user specified number of columns per row.

   If you have scanned in a table of information and used the "Replace spaces with tabs" command (⌨-Tab) in the InWords editor to convert spaces between items in the table to tabs, you will want to select **a tab character between each field, returns between records.**

   Appleworks GS will load the file into the spreadsheet document.

BeagleWrite GS (MultiScribe GS)

BeagleWrite GS™ can load both AppleWorks word processor files as well as ASCII text files. Therefore, loading a file created by InWords is quite easy.

If you are not familiar with how to open a word processor file with BeagleWrite GS, the instructions below should be helpful.

1. Choose **Open** from the File menu or press ⌂-O. The "Open which file" dialog box will appear.

2. Select the file to load from the list displayed in the "Open" dialog box.

GraphicWriter III

GraphicWriter III™ can import text saved in the ASCII text format as well as standard AppleWorks file format. With this in mind, loading a file created by InWords is quite easy.

The following steps should be helpful if you are not already familiar with importing files into GraphicWriter III.

1. Choose **New** from the File menu or press ⌂-N to open a new document, or choose **Open** or press ⌂-O to open an existing document.

2. Select the Text Tool from the Tool Box at the left of the screen.

3. Click in the typing frame you want to import into (text is inserted at the blinking insertion point). If a typing frame does not exist, create one.

4. Choose **Import** from the File menu or press ⌂-I and a dialog box listing all available translators will be displayed.

5. Highlight the appropriate translator listed in the dialog box. If you saved the text created by InWords by choosing the AppleWorks format selection, highlight **AppleWorks**. Otherwise, highlight **Universal** and click **OK**.

6. Select any desired Import Options, then choose **OK**.

7. Select the file to import from the list displayed in the "Open" dialog box.

HyperStudio

Text created and saved by InWords can easily be used in HyperStudio®. HyperStudio can import both AppleWorks format files and ASCII text files.

If you are not already familiar with loading text from disk into HyperStudio, the following instructions will help.

1. Open an existing stack or start a new stack by choosing **Open a stack** or **New stack** from the File menu.

2. Choose **Add a Text Item** from the Objects menu.

3. If this is the first text item you have added since starting up HyperStudio, you will get a dialog box explaining that the next step is to size the text box to the size you want, and to position it on the card. Successive text file selections proceed the same; they just aren't preceded with this "help" box. After clicking on **continue**, a rectangle is displayed that shows where the text rectangle will be placed on the screen. You can re-size and reposition this rectangle.

4. Click anywhere outside of the rectangle to indicate you are done positioning and sizing the rectangle. A dialog box of options will be displayed.

5. Select the appropriate options as needed.

6. Select **Using a Disk Text File** at the bottom of the dialog box. Another dialog box displaying AppleWorks and ASCII text files will appear.

7. Select the file. The file will appear in the rectangle.

Command
Summary

B

Preview commands

Recognize	**Return**	Start recognition process.
Move	**Arrow keys**	Move around image.
	⌘-Arrow keys	Move left, right, up or down one screen.
	⌘-1 thru ⌘-9	Move proportionally through image.
Redo	**⌘-R**	Redo scan.
Zoom	**⌘-Z**	Zoom to reduced/full-size view.
Cancel	**Esc**	Cancel scan and return to Scan menu.

Recognition and Training commands

Enter unknown	**Space bar**	Enter unknown character symbol.
	Option key	Enter a character without adding it to font table.
Skip character	**⌘-Space bar**	Skip character.
Skip line	**⌘-Return**	Skip remainder of line.
Font table	**⌘-F**	Edit font table/display character list.
Multiple character	**⌘-M**	Enter multiple/connected characters.
Stop	**Esc**	Stop recognition and display text in editor.

Miscellaneous commands

⌘-?	Display title screen.
Control-Reset	Recover from lock up and return Main menu.

Edit commands

Cursor moves	Arrow keys	Move left or right one character, or up or down one line.
	⌘-Left / ⌘-Right	Move to previous or next word.
	⌘-Up / ⌘-Down	Move up or down one screen.
	⌘-< / ⌘->	Move to beginning or end of line.
	⌘-1 thru ⌘-9	Move proportionally within file.

Editing	Return	Insert carriage return/new line.
	Delete	Delete character left of the cursor.
	Tab	Insert tab.
	⌘-D	Delete lines.
	⌘-E	Switch between insert and overstrike typing modes.
	⌘-X	Clear all text in editor.
	⌘-Y	Delete text from cursor to end of line.
	⌘- –	Remove hyphens from end of lines.
	⌘-Tab	Replace spaces with tabs.

Font table	⌘-F	Edit font table/display character list.
Summary	⌘-R	Display recognition summary.
Save	⌘-S	Save file to disk.
Unknown find	⌘-U	Find next unknown character symbol.

Exit	Esc	Exit editor and return to Main menu.

Index

InWords™ Keyboard Commands

Preview commands

Recognize	**Return**	Start recognition process.
Move	**Arrow keys**	Move around image.
	⌘-Arrow keys	Move left, right, up or down one screen.
	⌘-1 thru ⌘-9	Move to top, middle, or bottom of image.
Redo	**⌘-R**	Redo scan.
Zoom	**⌘-Z**	Zoom to reduced/full-size view.
Cancel	**Esc**	Cancel scan and return to Scan menu.

Recognition and Training commands

Enter unknown	**Space bar**	Enter unknown character symbol.
Don't train character	**Option key**	Enter a character without adding it to the font table.
Skip character	**⌘-Space bar**	Skip character.
Skip line	**⌘-Return**	Skip remainder of line.
Font table	**⌘-F**	Edit font table/display character list.
Multiple character	**⌘-M**	Enter multiple/connected characters.
Stop	**Esc**	Stop recognition and display text in editor.

Edit commands

Cursor moves	**Arrow keys**	Move left or right one character, up or down one line.
	⌘-**Left** / ⌘-**Right**	Move to previous or next word.
	⌘-**Up** / ⌘-**Down**	Move up or down one screen.
	⌘-**<** / ⌘-**>**	Move to beginning or end of line.
	⌘-**1 thru** ⌘-**9**	Move to beginning, middle, or end of file.
Editing	**Return**	Insert carriage return/new line.
	Delete	Delete character left of the cursor.
	Tab	Insert tab.
	⌘-**D**	Delete lines.
	⌘-**E**	Switch between insert and overstrike typing modes.
	⌘-**X**	Clear all text in editor.
	⌘-**Y**	Delete text from cursor to end of line.
	⌘-**--**	Remove hyphens from end of lines.
	⌘-**Tab**	Replace spaces with tabs.
Font table	⌘-**F**	Edit font table/display character list.
Summary	⌘-**R**	Display recognition summary.
Save	⌘-**S**	Save file to disk.
Unknown find	⌘-**U**	Find next unknown character symbol.
Exit	**Esc**	Exit editor and return to Main menu.

WestCode
S O F T W A R E