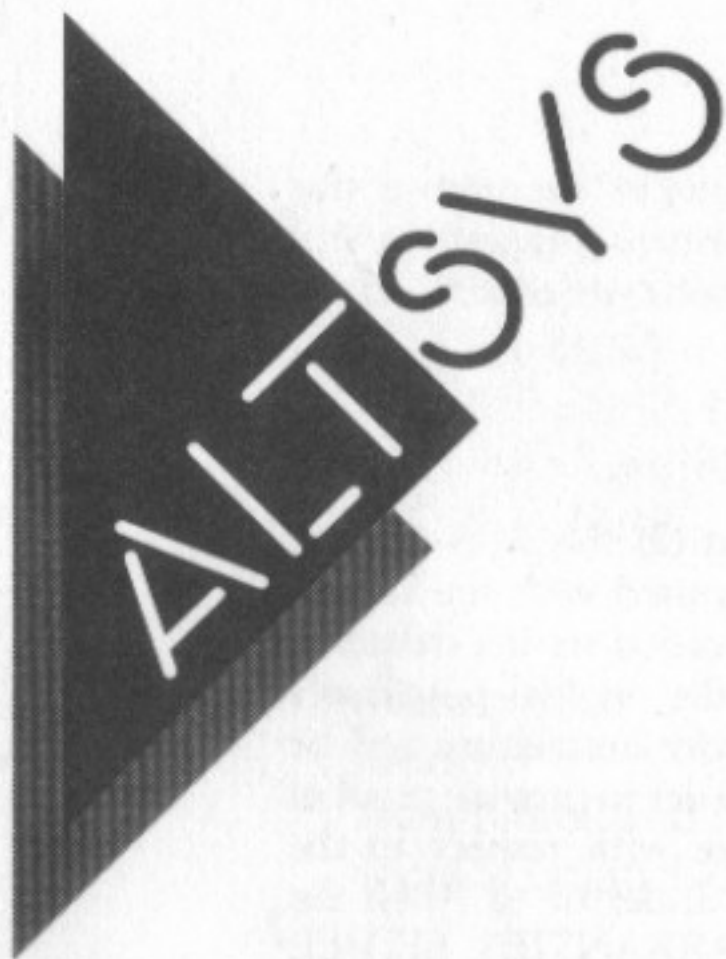


# User's Guide



**METAMORPHOSIS<sup>®</sup> Professional**





# METAMORPHOSIS

*Professional*

User's Guide

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## Credits

Metamorphosis Professional version 2.0 was written and developed by James Brasure, Pete Mason, Jim Von Ehr, Tom Irby, David Spells, Parry Kejriwal, and Kevin Crowder. With special thanks to PostScript wizard Harvey Grosser.

This manual was written by Katharine Green with editing (and a lot of help) from Claudia Buisson, Earl Allen and Pete Mason. Special thanks to James Brasure, Kent Dowden and George Sullivan, Jr.

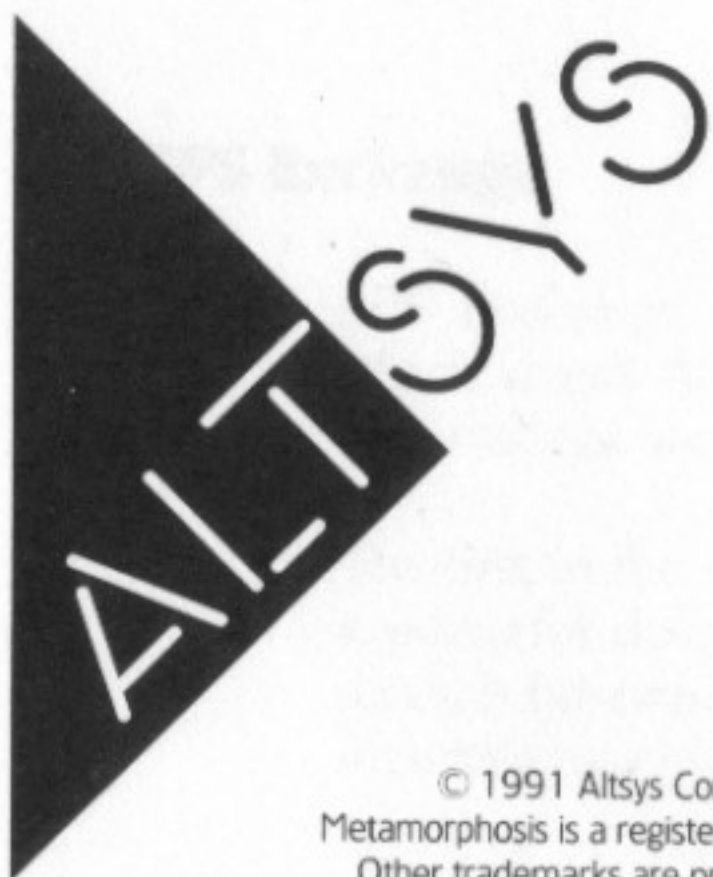
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Program and *User's Guide* updates will be available from time to time. Altsys will notify registered users when an update is available, at which time they may purchase the update at a substantial discount.

## Customer Support

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Altsys Corporation  
269 W. Renner Road  
Richardson, TX 75080  
(214) 680-2060  
MCI Mail: ALTSYS (271-8914)  
CompuServe: 76004, 2071  
AppleLink: D0590  
FAX: (214) 680-0537



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# CHAPTER ONE

## Introducing Metamorphosis Professional

Metamorphosis® was the first product to allow you to convert your Type 3 PostScript® language typefaces into Type 1 (Adobe Type Manager™-compatible) fonts and also convert your Type 1's into Type 3's. Metamorphosis Professional version 2.0 expands those original capabilities to provide you with all the features you need to keep up with the advances of today's exciting new font technologies.

With Meta Pro, you now have the ability to convert an entire character set or specific lines of text to PICT and EPS format for use on the Apple® Macintosh®. So now, instead of being limited by what you can do with your text in drawing programs like Canvas™, MacDraw®, and Aldus SuperPaint®, you can treat your type just like any other graphic image. Fill your characters with checks, stripes, dots, change their line sizes, and stretch and manipulate their outlines.

**Look what you  
can do now!**

Metamorphosis Professional (or Meta Pro) also gives you the ability to convert your fonts into TrueType™ for the Macintosh or IBM-compatible personal computers (PCs). TrueType is Apple's outline font format that can be used with System 7 operating software and versions of Microsoft Windows which support TrueType. What makes TrueType unique is the fact that it can be used for both the screen display and printing, eliminating the need to have two font files for each typeface. Those of us who have invested heavily in PostScript typefaces don't have to despair or be left behind. You can now convert all of your PostScript typefaces directly into TrueType with Metamorphosis!



Metamorphosis Professional converts your fonts into:

- PICT and EPS outline formats for use on the Macintosh;
- TrueType fonts for the Macintosh and IBM-compatible personal computers;
- Type 1 PostScript fonts for the Macintosh, for IBM-compatible PCs running ATM under Windows 3.0, and for the NeXT®;
- Type 3 PostScript fonts for the Macintosh and the PC; and
- Fontographer® database files, which can be used in Fontographer to create custom type for the Macintosh, IBM-compatible PCs using Windows 3.0 running ATM, and NeXT computers.

## **Before you begin**

### **What do you need to get started?**

Before you actually start using Metamorphosis Professional, check to make sure your package is complete. Your package should include the Metamorphosis Professional "Program disk" and the *User's Guide*.

You must have a Macintosh Plus (or higher) computer with at least 1 megabyte of RAM. Metamorphosis Professional can run on a single floppy drive system (with some inconvenience), a two floppy drive system, or a system with a hard disk (recommended).

The System file on your disk should be version 6.0.4 or later, and the Finder should be version 6.1.4 or later.



## **Backup your Metamorphosis Professional disk**

Before you do anything else, turn your disk over so the back side faces you and push the black tab up so you can see through the write-protect opening. This will prevent you from accidentally erasing any information while you make backup copies. You should immediately make a copy of the Metamorphosis Professional master disk for a backup copy. Find a blank disk and copy Meta Pro onto it by dragging its icon onto the blank disk's icon. Change the disk if requested. You should now use this new disk and store the original Metamorphosis Professional "Program disk" in a safe place.

## **Read me...**

All Altsys release and update disks contain a TeachText document titled "ReadMe." This document contains information about the product which may not be present in the *User's Guide*. You should read this file before attempting to use the program.

## **Register for technical support**

Altsys believes in customer support and wants to resolve any problems you have.

To become a registered user and to receive technical support, notification of product upgrades, and other news about Metamorphosis Professional and Altsys, you must complete and return the registration card included in this package.

Our support lines are available on business days, Monday through Friday from 9:00 AM to 5:00 PM Central Time. **Our support phone number is (214) 680-2093.** Please have your serial number on hand when you call. Your serial number is located on the back of the "Program disk."

You can also receive more information on CompuServe: GO MACBVEN, data library 3, Subtopic #3. On America Online, type Command-K and enter the name Altsys.



The remainder of this section tells you how to begin using Meta Pro.

### **To install Meta Pro:**

You can see the application icon on the Metamorphosis Professional disk.



Metamorphosis™ Professional

- If you have a hard disk, create a file folder on it by choosing "New Folder" from the File menu.
- Change the name of the "Empty Folder" to a name like "Meta Pro" or some other name that makes sense to you.

**Note:** If you are running System 7, this folder will be named something different, like "Untitled folder."

- Drag the Meta Pro application from its diskette into the new folder you just created.

That's all there is to it! You've just installed Metamorphosis Professional.



## Using Metamorphosis Professional

### To start Meta Pro:

- Click on the Meta Pro icon.



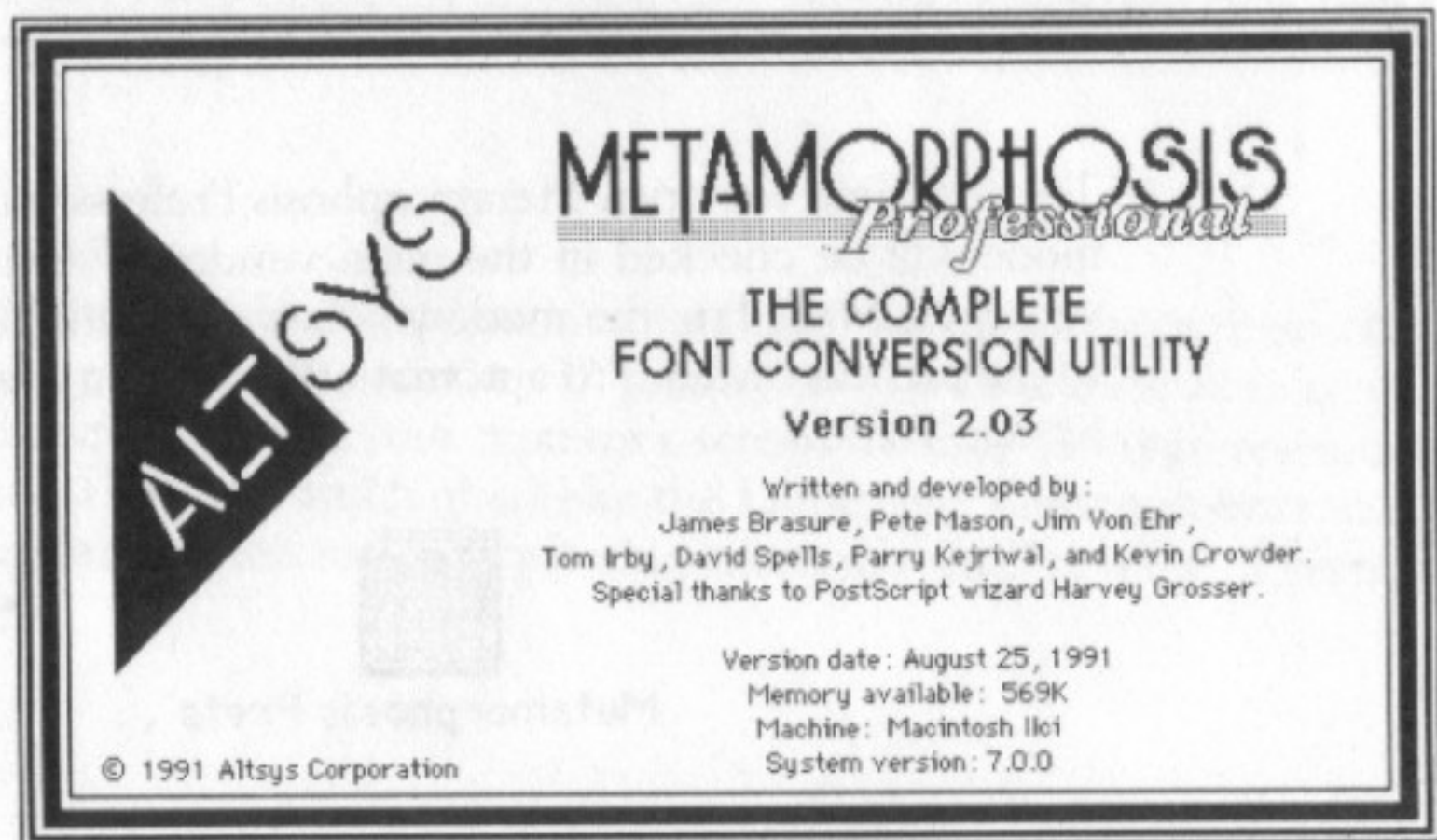
Metamorphosis™ Professional

- Choose "Open" from the File menu.

OR (the preferred method)

- Double-click on the Meta Pro icon.

Metamorphosis Professional will display an opening screen that contains copyright and version information.

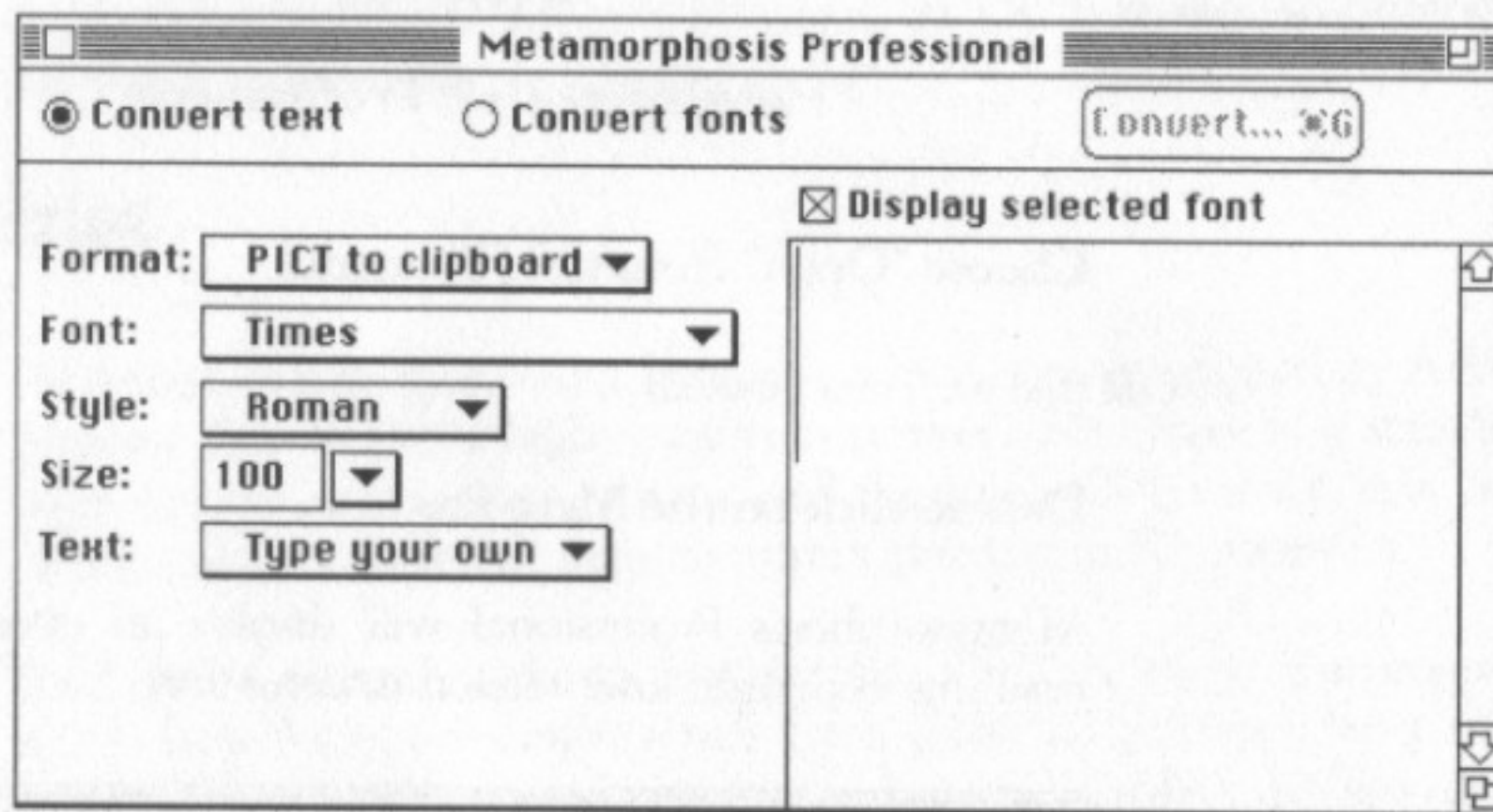




After a brief pause, Metamorphosis Professional's main window appears. The main window is where you choose all your conversion options.

## The main window

You can move the main window by clicking on its title bar with the selection pointer and dragging it.



The first time you open Metamorphosis Professional, the "Convert text" mode will be checked in the main window. From then on, whenever you open Meta Pro, the mode you last used will be active. This is due to the fact that Meta Pro automatically places a preferences file in your System Folder.



Metamorphosis Prefs

The file is named "Metamorphosis Prefs" and is responsible for saving information about Metamorphosis Professional's conversion modes. With the preferences file in your System Folder, it is possible to open Meta Pro with the same settings and mode you last used. Meta Pro also remembers your output formats.

So if you used the "Convert text" mode the last time you used Meta Pro, the program automatically remembers the output formats and options you selected. See page 57 for more detailed information about the Preferences file.

## **Conversion modes**

After you open Meta Pro, the first thing to do is decide which mode you wish to use. Do you want to convert text to PICT or EPS format? If so, you choose the "Convert text" mode. If you want to convert fonts to other font formats, choose "Convert fonts."

The first conversion mode we will discuss is "Convert text." If you want to begin converting fonts, go directly to Chapter Three which begins on page 33.



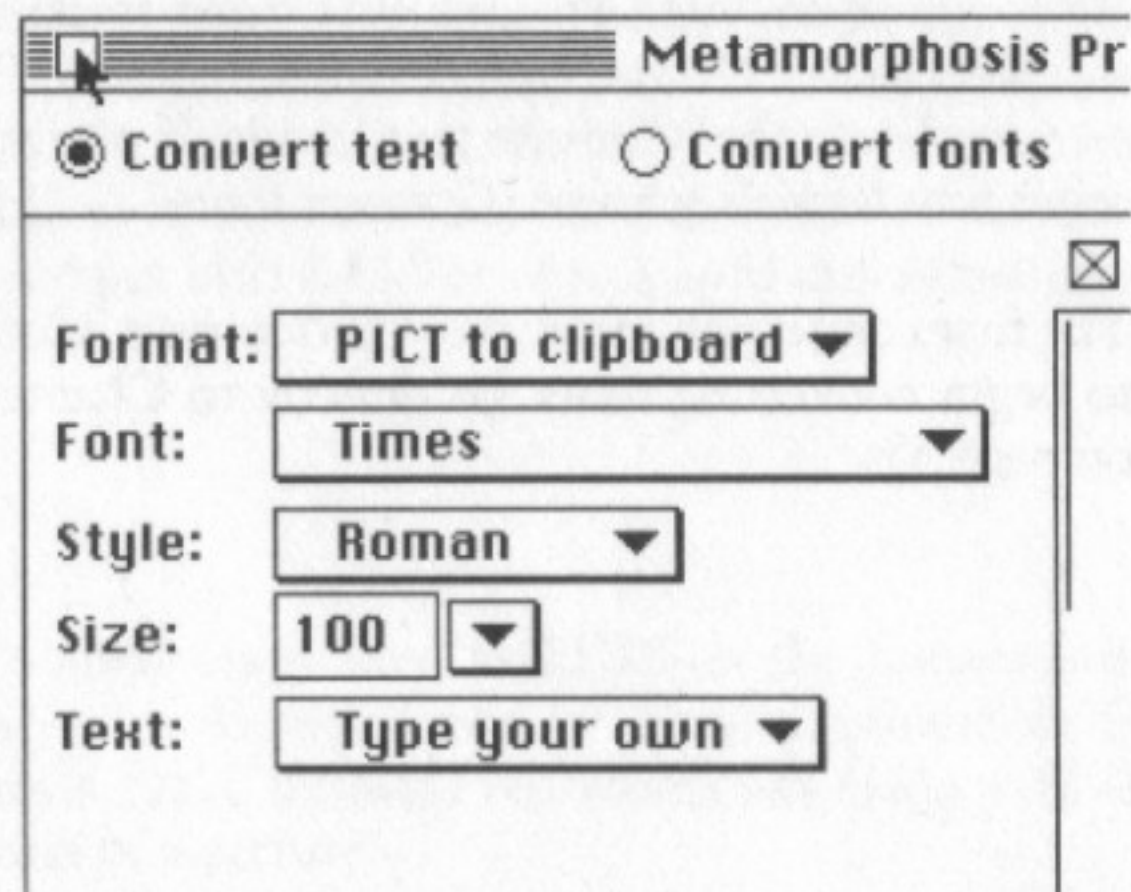
## Quitting Metamorphosis Professional

### To quit Meta Pro:

- Choose "Quit" from the File menu or type ⌘Q to exit the program.

OR

- Click on the close box.



# CHAPTER TWO

## Convert text

This mode allows you to convert to paths (or outlines) whatever text appears in the text edit box. The most important aspect of this mode is that you have the ability to type in the text you want to convert.

Five options are provided in the "Convert text" dialog: Format, Font, Style, Size, and Text. You can change any or all of these options as you use the program. There are six basic steps in the "Convert text" mode.

1. Select (or type in) the text you wish to convert.
2. Choose the format you wish to convert to.
3. Choose your font.
4. Choose your font style.
5. Choose your font size.
6. Convert.

Converting text into PICT outlines is so simple that we will show (on the next three pages) how to convert a phrase into a PICT outline and "Paste" it into MacDraw. If you don't want to participate in this exercise, you can proceed directly to page 12 for more detailed information about each of the "Convert text" options.

- Double-click on the Meta Pro icon to open the program.



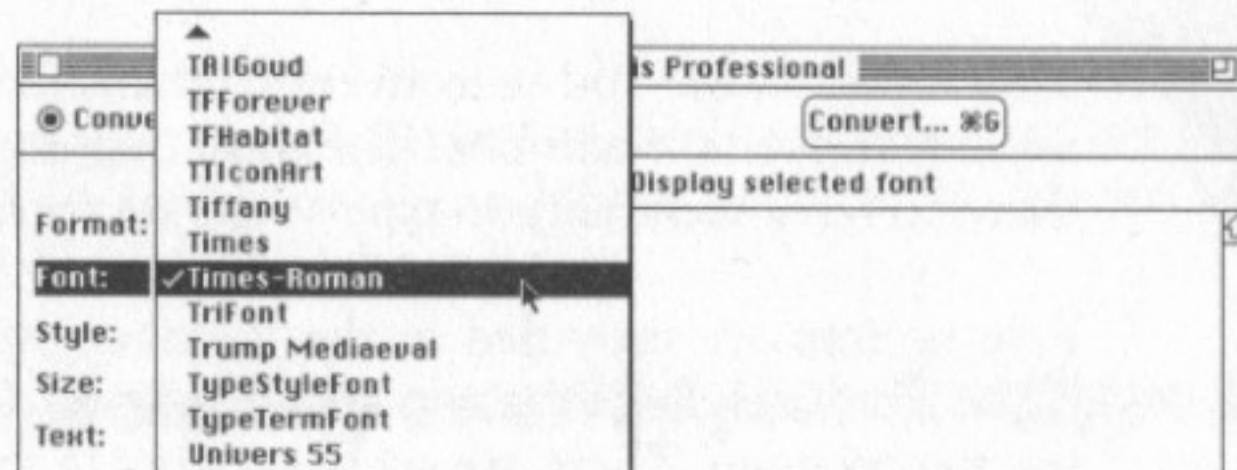
Metamorphosis™ Professional



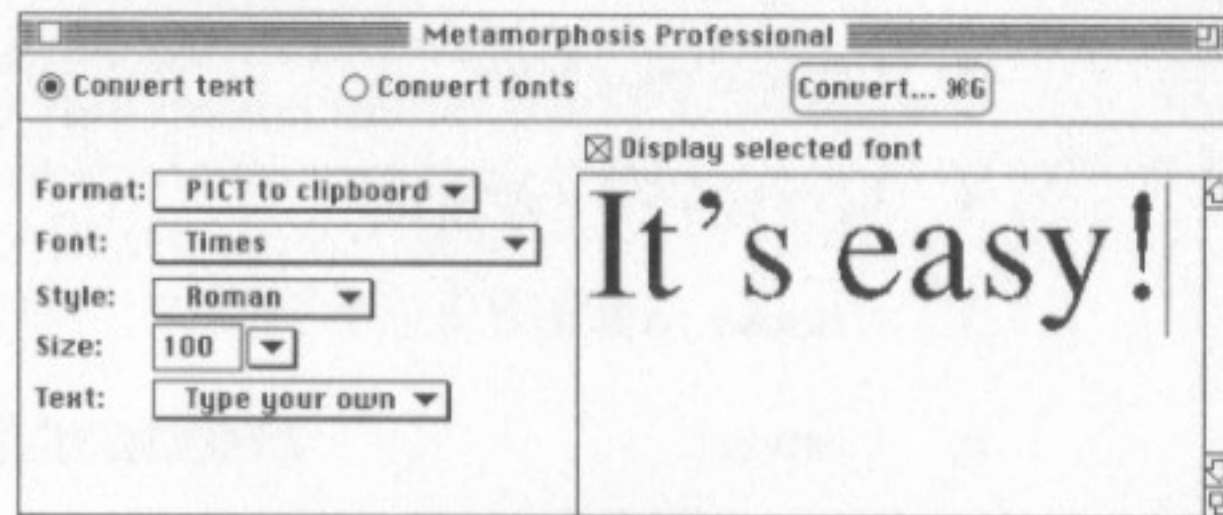
The first time you open Meta Pro, the "Convert text" window is active and (if you have Times-Roman installed) all the modes appear identical to our example window.

If you don't have Times-Roman installed you can:

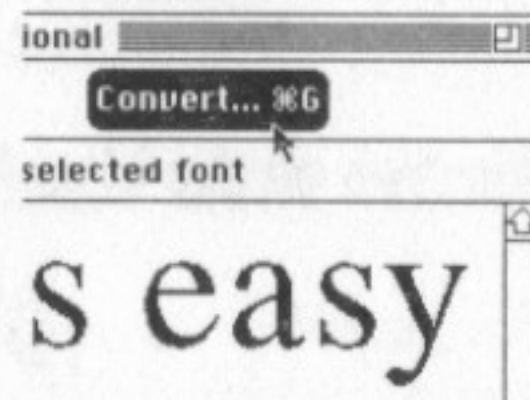
- Drag through the "Font:" menu to select another font.



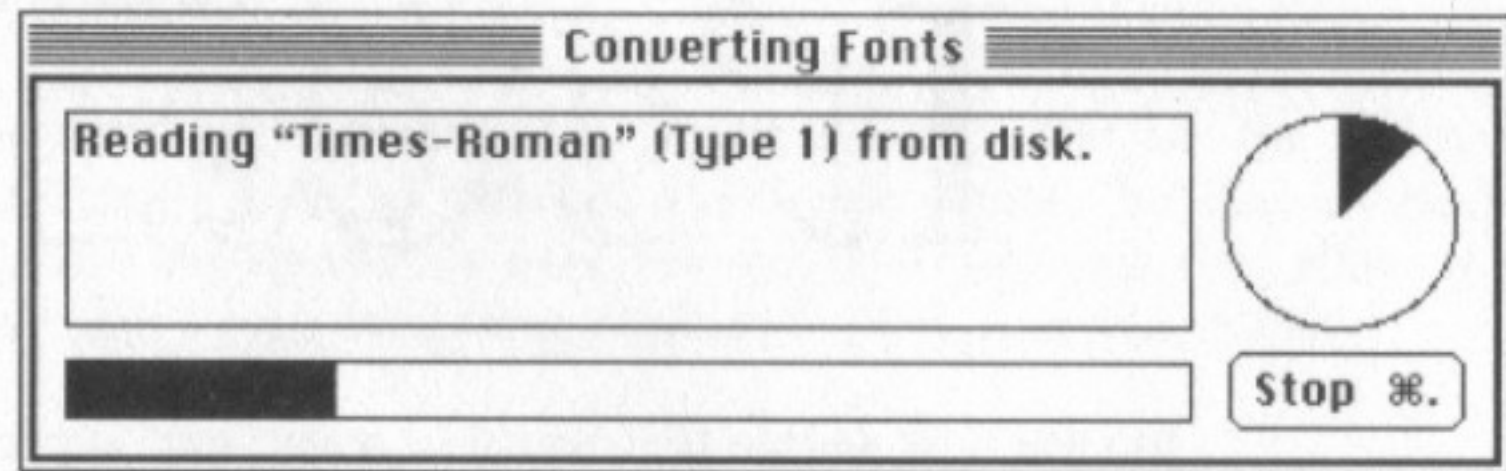
- Type "It's easy!" in the text edit box on the right.



- Press the "Convert" button.



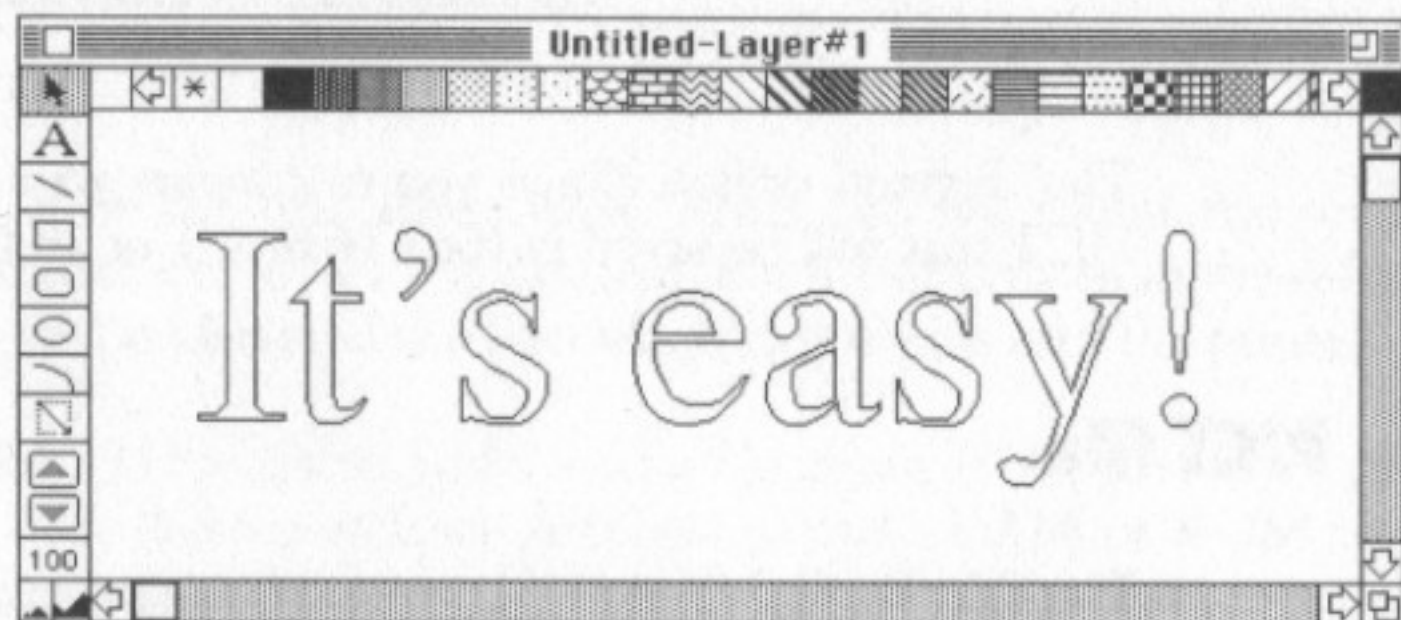
A dialog box shows which font is being generated. Its progress bar shows how the font conversion is progressing. The pie graph on the right shows the portion of time that has elapsed in the overall font conversion process.



When the font is finished converting, since Meta Pro automatically places your PICT into the clipboard, you can paste your PICT file directly into MacDraw (or another drawing program).

**Note:** If you are running under MultiFinder or System 7, you can have Meta Pro and your drawing program open at the same time.

- "Paste" your newly converted PICT file into your drawing program. Our example is in MacDraw II.





- Now you can select one or several characters, fill them with patterns, change their line sizes, or use the "Reshape" tool to drag the points.

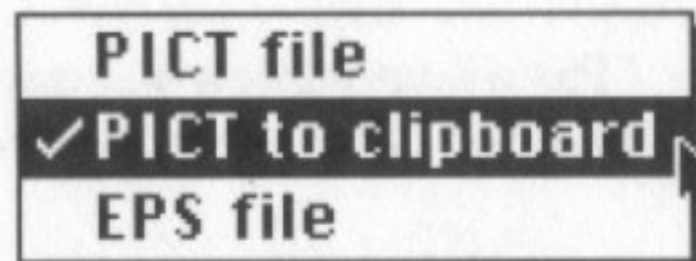
It's easy!

You see how simple that was? Go ahead and experiment, the sky's the limit!

## Convert text options

### Format

**Format:**



The "Format" option allows you to convert your text to a PICT file, a PICT that will be saved in the Clipboard, or an EPS file.

### PICT file

The "PICT file" option is provided to generate PICT format files. Metamorphosis Professional creates an object-oriented PICT that stores the points and paths of the characters.

Programs such as MacDraw and MacDraw II, Canvas, Cricket Draw, DeskDraw, and Aldus FreeHand can read this file format directly for editing purposes. So now you can fill your characters with specific colors or patterns, reshape, distort, or enhance them, and even change their line sizes.

Metamorphosis Professional automatically retains the kerning of any fonts that it converts to PICT and EPS. The illustration below shows the difference between text typed in MacDraw II and a Meta Pro PICT file opened with MacDraw II.

To

Typed text  
(not kerned)

To

Pasted PICT outlines  
(kerned)

To

Pasted PICT outlines  
(filled and kerned)

Remember also that the characters in the middle and right-hand side are outlines, so you can edit them and apply whatever fills or patterns you choose.

**Note:** PICT outlines are not always absolutely identical to their PostScript counterparts; there is a small amount of approximation involved in the conversion. For more information about PICTs, see page 29.

Meta Pro offers you the option of choosing a file name and choosing where you would like it stored when you press the "Convert" button. This is explained in detail on the next page.

A converted TimesRoman font could be named "TimesRoman.pict" and look like the document icon below.



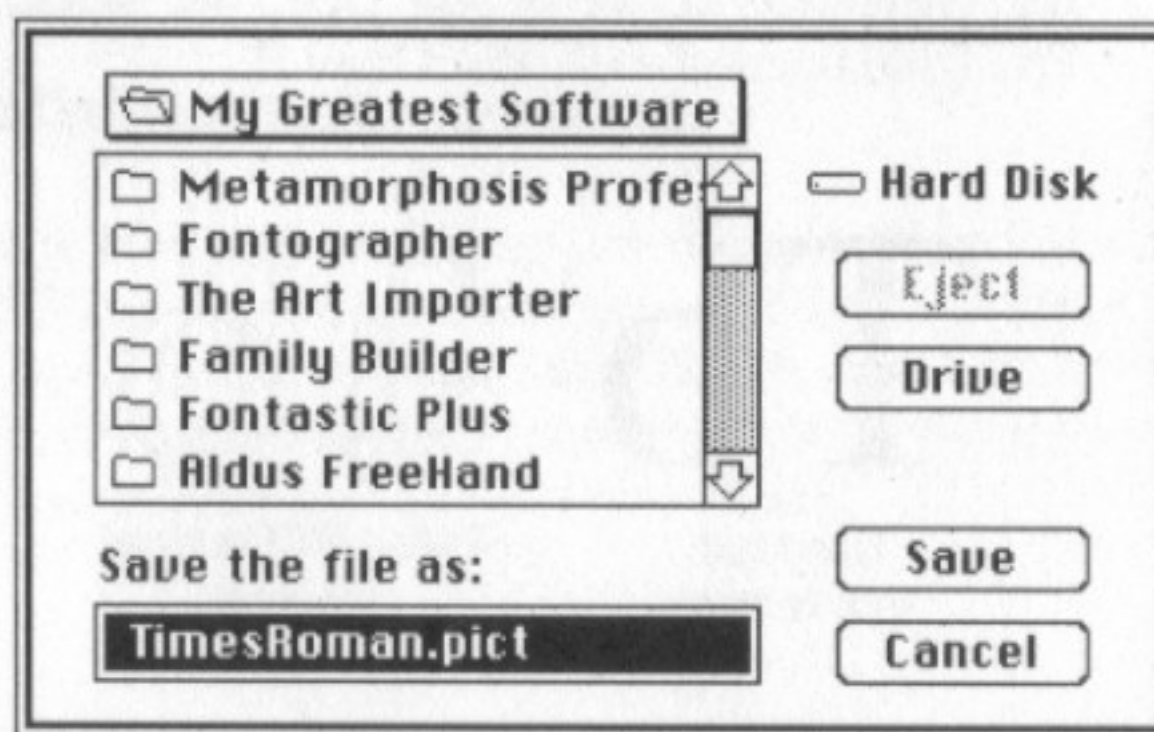
TimesRoman.pict



## To name a PICT file:

When you "Convert" font outlines to a PICT file, Metamorphosis offers you the option of naming it yourself or with the default name Meta Pro provides.

- Type the new name in the "Save" dialog box.



- Click the "Save" button.

**Note:** If you already have a PICT file named GoudyOldstyle.pict in the folder that you generate to, Meta Pro will ask you to rename your new file.

## PICT to clipboard

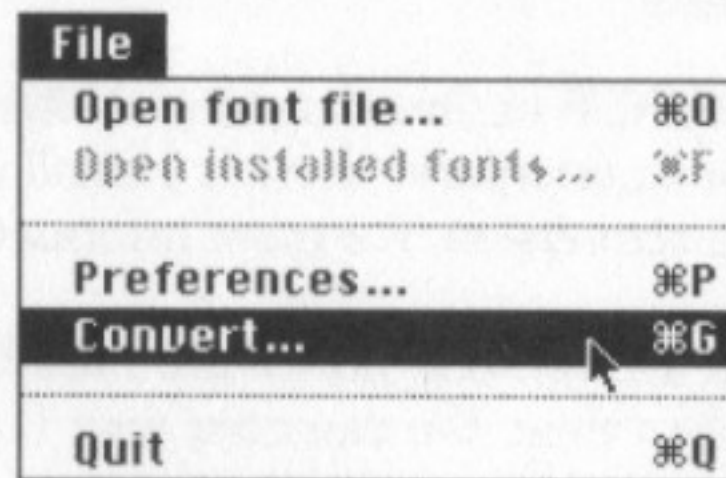
If you choose the "PICT to clipboard" option, the PICT file is automatically stored in a holding place known as the Clipboard. You should "Paste" it into another application (or your Scrapbook) immediately since the next item that is converted or copied to the Clipboard will replace the PICT you just put there.

### To convert PICT to clipboard:

- Select all your options, like font, style, and size.
- Convert your characters by pressing the "Convert" button, or by typing ⌘G.

OR

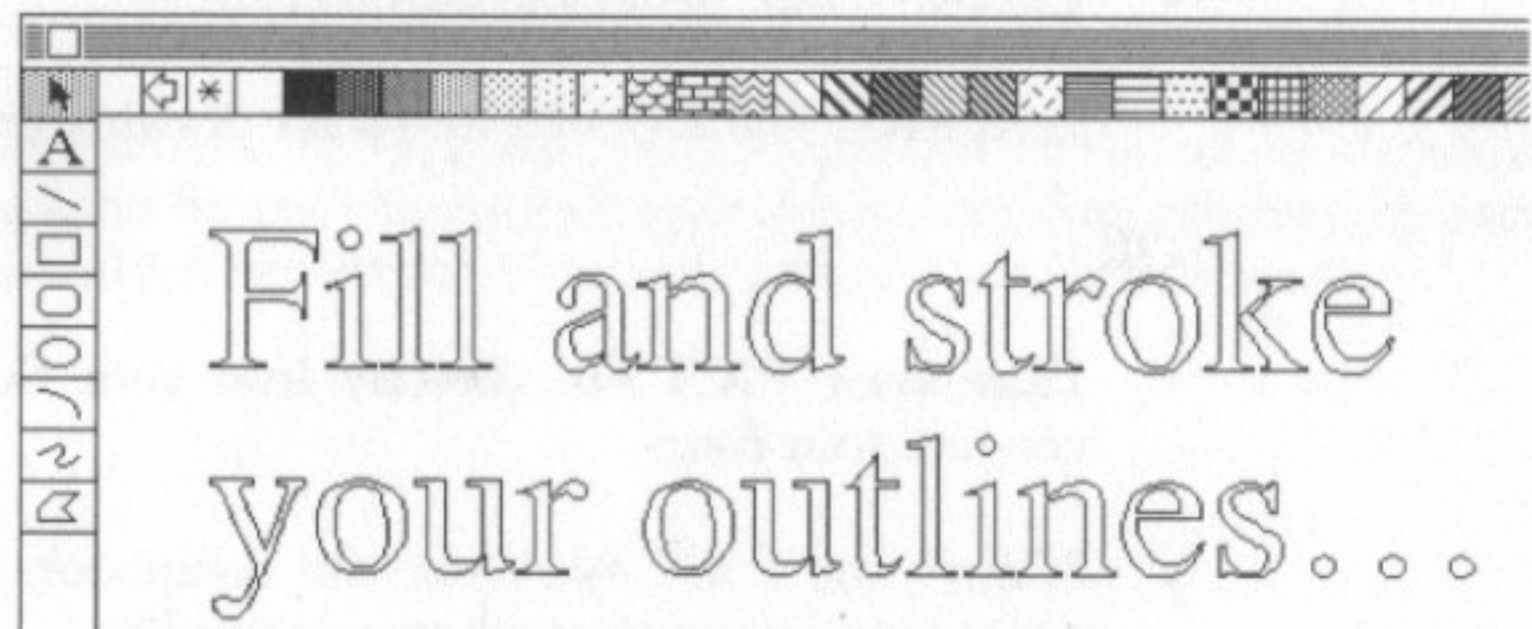
- Choose "Convert..." from the File menu.



If you are running under MultiFinder or System 7, you can have Meta Pro and your drawing program open at the same time.

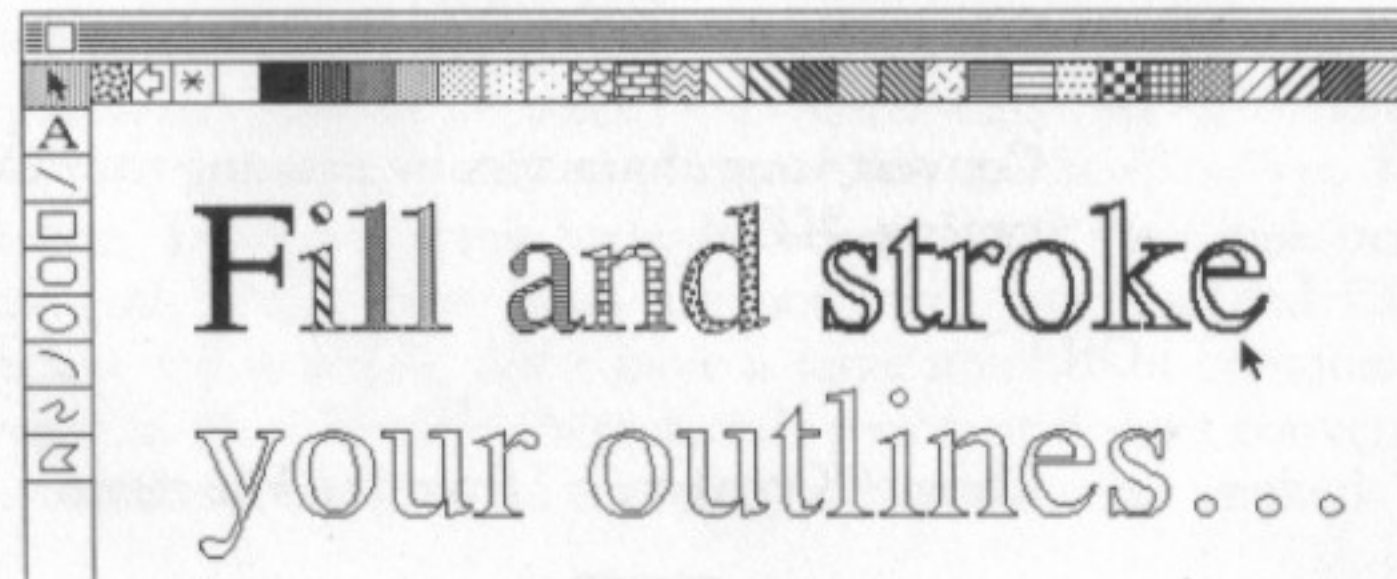
After you convert your characters you then:

- "Paste" your newly converted PICT file directly into your drawing program, which in our example is MacDraw II.





- Click on one or several characters and select a pattern or fill.



**Note:** PICT outlines are not always absolutely identical to their PostScript counterparts; there is a small amount of approximation involved in the conversion. For more information about PICTs see page 29.

If you are running under the Finder, you can only have one program open at a time. You can copy your PICT file into your drawing program one of two ways.

- Choose your options and convert your text.

Metamorphosis Professional stores the PICT file in your Clipboard.

- "Quit" Meta Pro.
- Open your drawing program.
- Choose "Paste" from the Edit menu.
- Your PICT file is pasted into your drawing program's work area.

OR

- Paste your PICT file directly into your Scrapbook after you convert your fonts.
- "Copy" the PICT file from the Scrapbook and "Paste" it into your drawing program whenever you like.

## EPS file

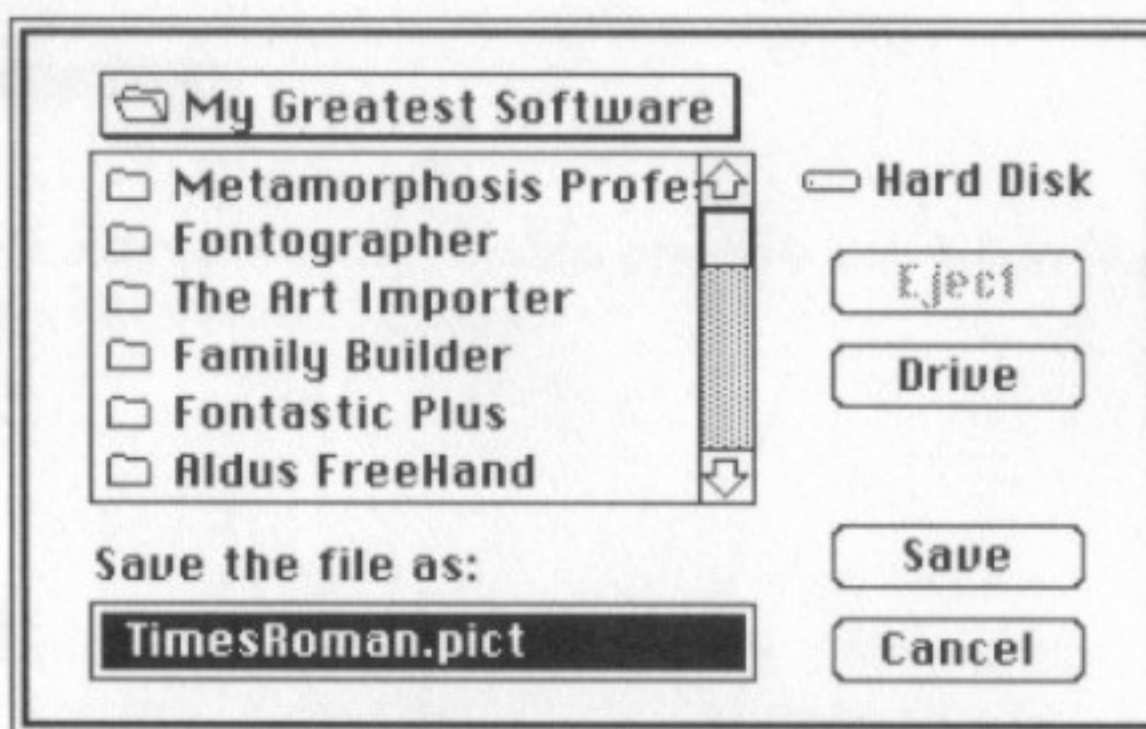
The "EPS file" option generates an Adobe Illustrator® 1.1-style EPS (Encapsulated PostScript) format file. Programs such as Aldus FreeHand® and Adobe Illustrator can open this file format directly for editing purposes. And once you open your EPS file, you can add or delete points, reshape, distort or fill characters with a specific color or pattern, or change the stroke weight. You can even alter a character's shape to create swash caps.

Even though the current versions of FreeHand and Illustrator have a command for getting font outlines themselves, they cannot convert all kinds of fonts, such as fonts that reside only in the printer, TrueType fonts, and some Type 3 fonts. With Metamorphosis Professional, you are assured of getting the outlines from Type 1, Type 3, and TrueType into both these programs.

When you generate an EPS file, Metamorphosis Professional allows you to choose your own file name.

### To name an EPS file:

When you press the "Convert" button, this dialog box appears.

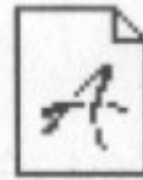




- Type the new name in the appropriate box.
- Click the "Save" button.

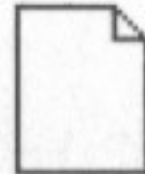
**Note:** If you already have an EPS file with the same name in the folder that you generate to, Meta Pro will ask you to choose a new file name.

If you name your file "TimesRoman.art" it will look like the Adobe Illustrator 1.1 document icon below.



TimesRoman.art

If you don't have Illustrator 1.1 anywhere on your system, your icon will look like the generic blank page icon below.



TimesRoman.art

## Font



The "Font" popup menu allows you to select the typeface that you'd like to convert to PICT or EPS format.

All your installed outline fonts (PostScript or TrueType) will be listed in the "Font" popup menu. This means that bitmap fonts like Geneva and Chicago will not appear unless they have TrueType outlines available to them. You select a font the same way you select other popup menu items: by holding down the mouse button and dragging through the font menu. An arrow at the top of the font menu indicates that there are more fonts listed above the first font in the list.

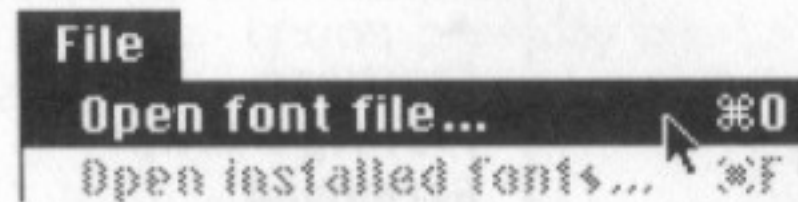
**Note:** Changing the font automatically changes all the text in the edit box.

## Open font file...

The "Open font file..." option is provided to allow you to open a font you have stored in a specific folder or location different from those installed in your System file. In this instance, the following procedure will open that font file.

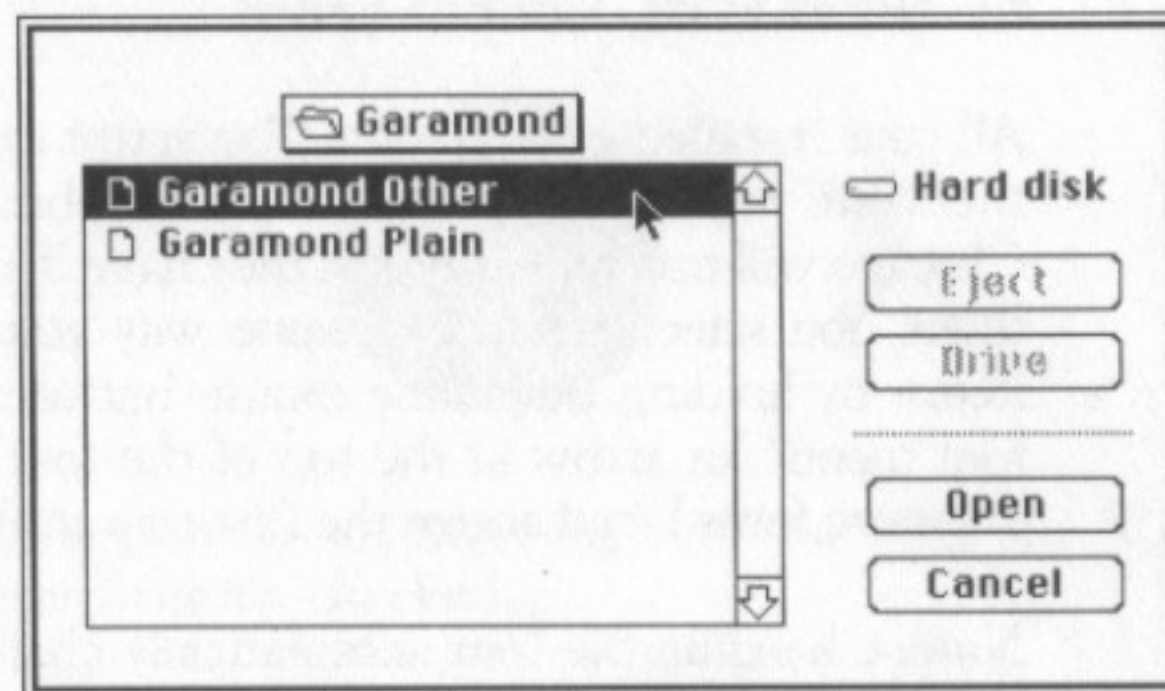


## To open a font file:



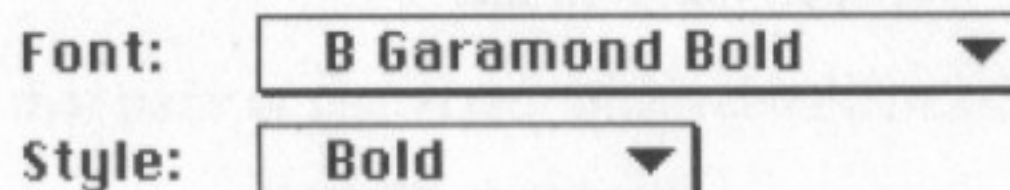
- Choose "Open font file..." from the File menu or type ⌘O.

This presents the standard file selection dialog, which allows you to choose a bitmap font file, a Fontographer outline source file, or a TrueType suitcase from the folder in which it is stored. The file selection dialog works in the standard fashion, so you can change drives, eject disks, open a file, or cancel.



- Choose the font file you wish to open by clicking on its name.
- Click the "Open" button.

Meta Pro places all the fonts from the file you select into the "Font" popup menu.



If there is more than one font or style in the font file you select, you will be able to select all of them in the "Font" menu as shown below.



## Style



The "Style" popup menu allows you to select the style of the font that you'd like to convert to PICT or EPS format. This menu will vary depending which font you select.

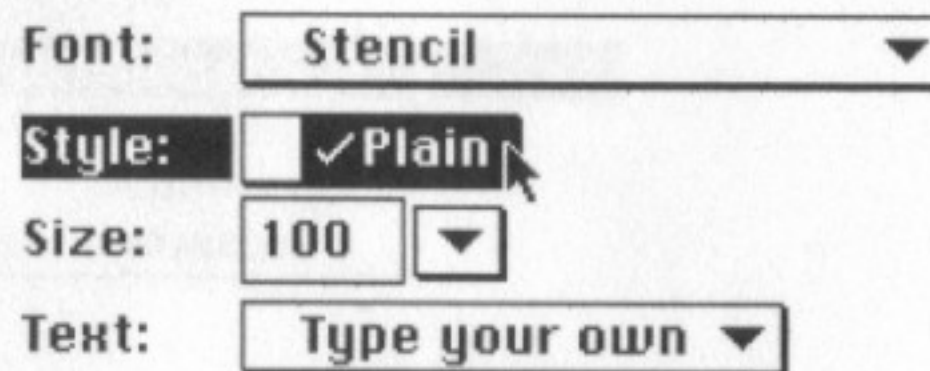
Only style variations associated with the chosen font family will be displayed in the "Style" menu. You select a style the same way you select any other popup menu item: by holding down the mouse button and dragging through the "Style" menu.

If you change the font, the style menu will also change. For example, selecting Times will change the "Style" menu to list Roman, Bold, Italic, and BoldItalic.





But selecting Stencil, for example, will change the "Style" menu to show only Plain. That is because Stencil is available only in the Plain style.



Font: Stencil ▼

Style: ☒ Plain

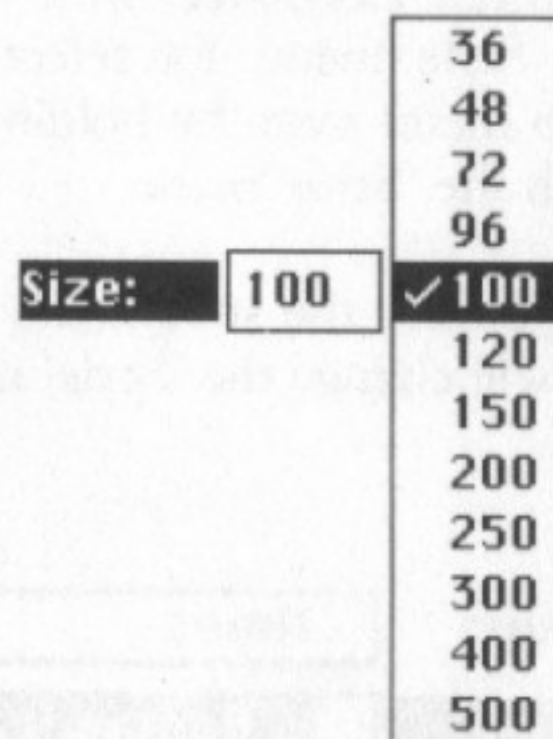
Size: 100 ▼

Text: Type your own ▼

Some fonts have styles with unusual names. In addition to the standard Plain, Bold, Italic, and Bold Italic, be prepared to see names like DemiItalic, Oblique, BoldOblique, LightOblique, Black, BlackOblique, Demi, DemiBold, Serif, SerifDemiBold, SerifItalic, SerifDemiItalic, Light, LightItalic, Book, Condensed, and even Laser. Some names indicate the same style. For instance, Italic and Oblique usually are the same on the Macintosh.

**Note:** Changing the style automatically changes all the text in the edit box.

## Size



Size: 100

- 36
- 48
- 72
- 96
- ☒ 100
- 120
- 150
- 200
- 250
- 300
- 400
- 500

The "Size" popup menu allows you to select the size of font that you'd like to convert to PICT or EPS format.

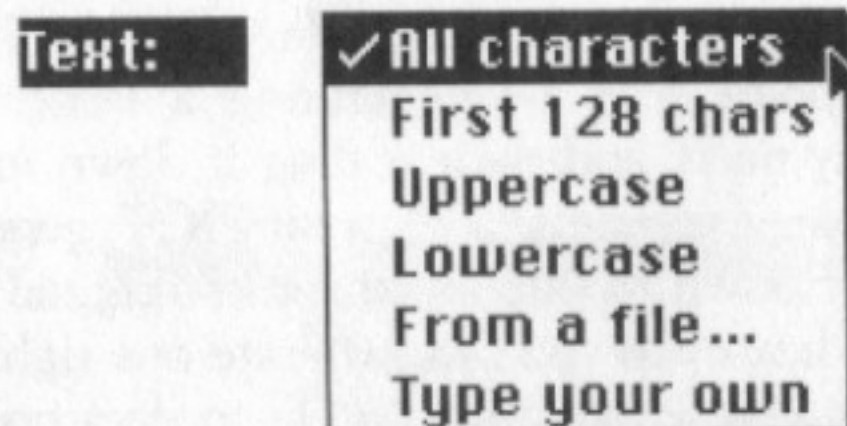
Meta Pro automatically displays twelve point sizes in the "Size:" menu. The point sizes Meta Pro displays are larger than most size menus due to the way PICT images display text. You'll get better results if you need small point sizes by generating a larger size PICT than what you actually need, and then scaling it down in your drawing program. For example, if you need a 24 point PICT, generate it at 96 points and then scale it down to one-fourth of its original size. If you want a 96 point PICT, however, you can generate one right at 96 points because that is usually large enough for PICTs to do a good job. Refer to "Things you should know about generating PICT format files" on page 29 for more detailed information about this.

You select a size the same way you select any popup menu item: by holding down the mouse button and dragging through the "Size" menu. To enter a size other than those displayed, simply type the number into the size box directly to the right of "Size:" You can enter and convert point sizes between 1 and 1,000. However, the largest size that will display in Meta Pro's text edit box is 72 points.

**Note:** Changing the size automatically changes all the text in the edit box.

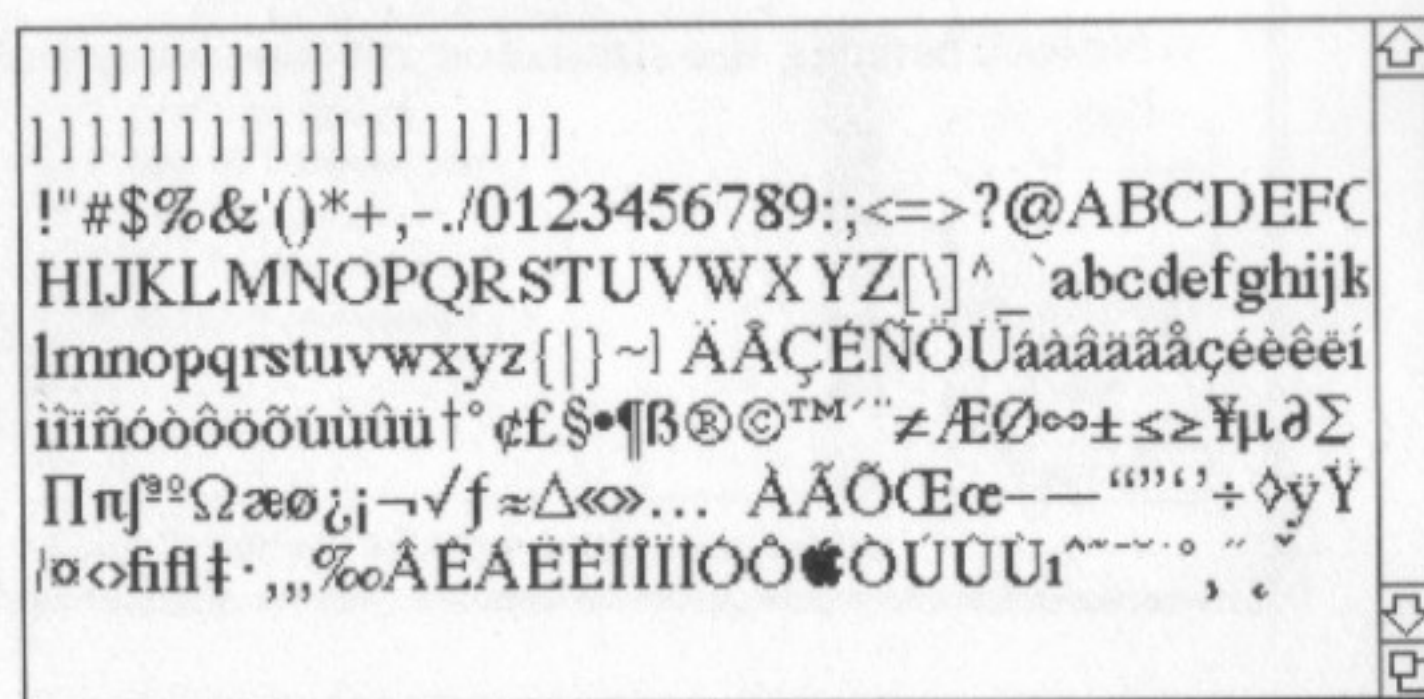


## Text



The "Text" popup menu determines what text appears in the text edit box. Choosing a new option causes the text currently in the edit box to be replaced by the text that the new option specifies.

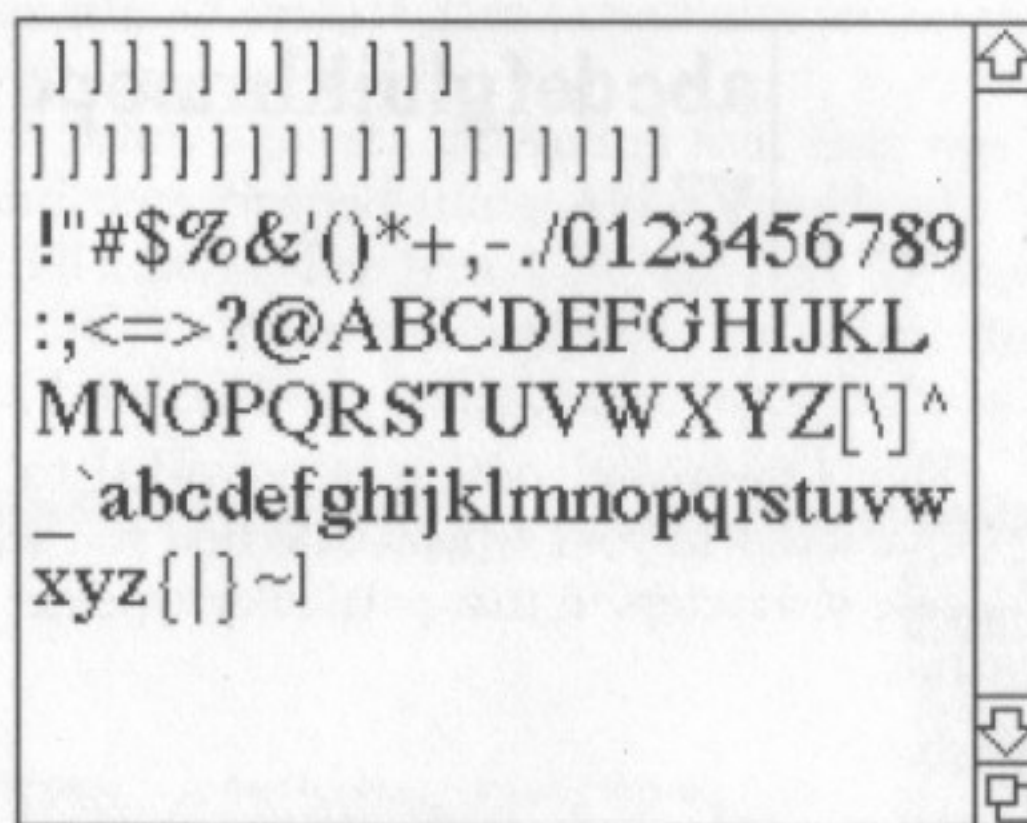
## All characters



The "All characters" option is provided for instances where you want to convert all 256 characters in the font.

**Note:** Brackets or squares at the beginning of the character set represent characters (control characters, for example) that don't contain an image.

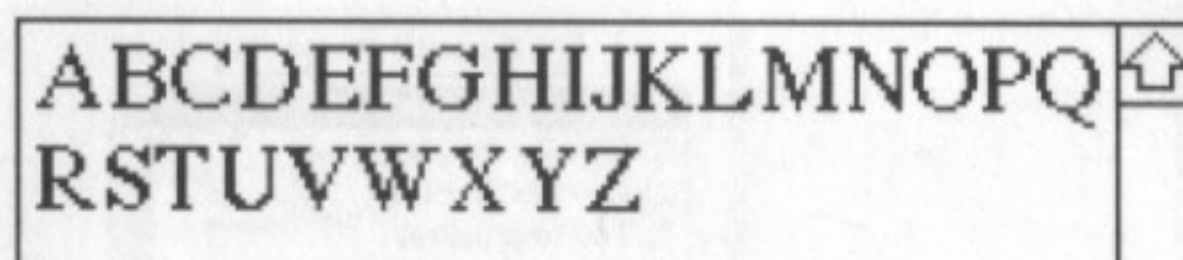
## First 128 characters



The "First 128 characters" option is provided for instances where you want to generate fonts containing characters 0-127 (punctuation characters, the standard upper and lowercase characters, and the numbers 0 through 9).

These are the characters you will usually be interested in. This choice will not include the European accents and symbol characters. This option would also be a good choice if storage space is a consideration.

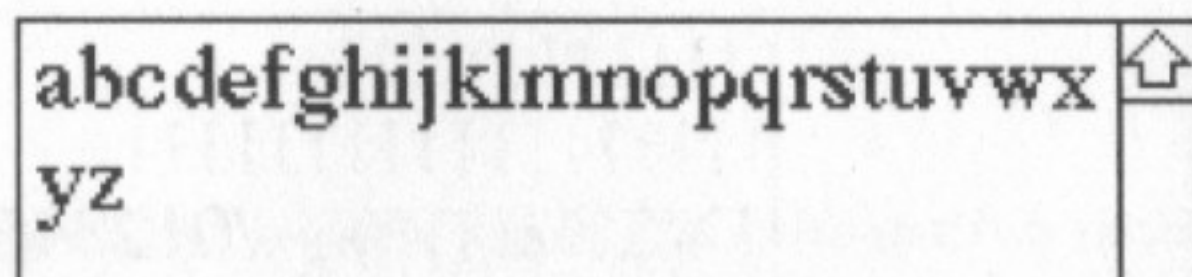
## Uppercase



The "Uppercase" option is provided for instances where you want to generate only the uppercase characters in your typeface. When you select this option, all the uppercase characters in that particular typeface are displayed in the text edit box.



## Lowercase



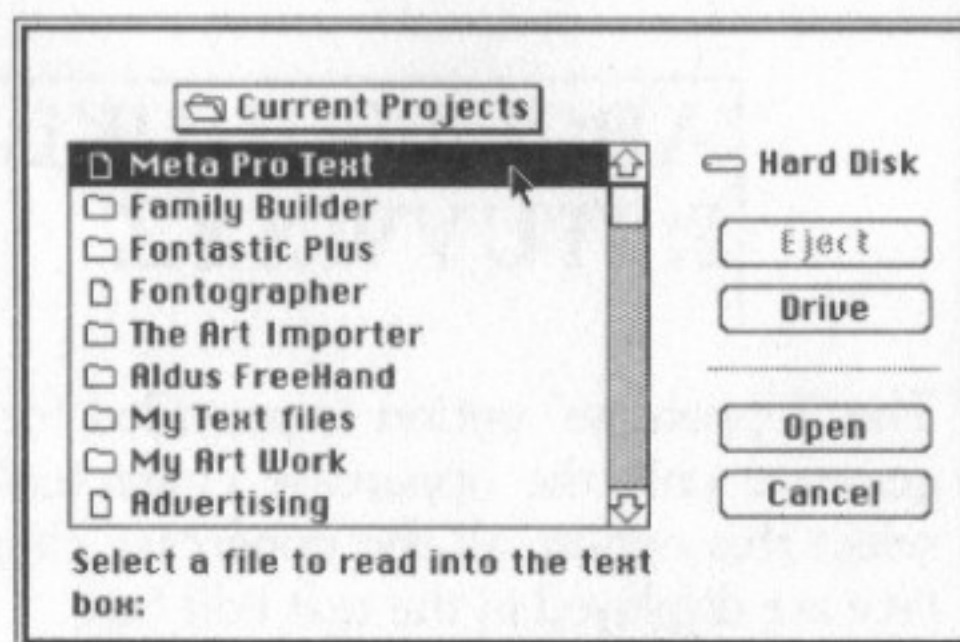
The "Lowercase" option is provided to generate only the lowercase characters in your typeface. When you select this option, all the lowercase characters in that particular typeface are displayed in the text edit box.

## From a file...

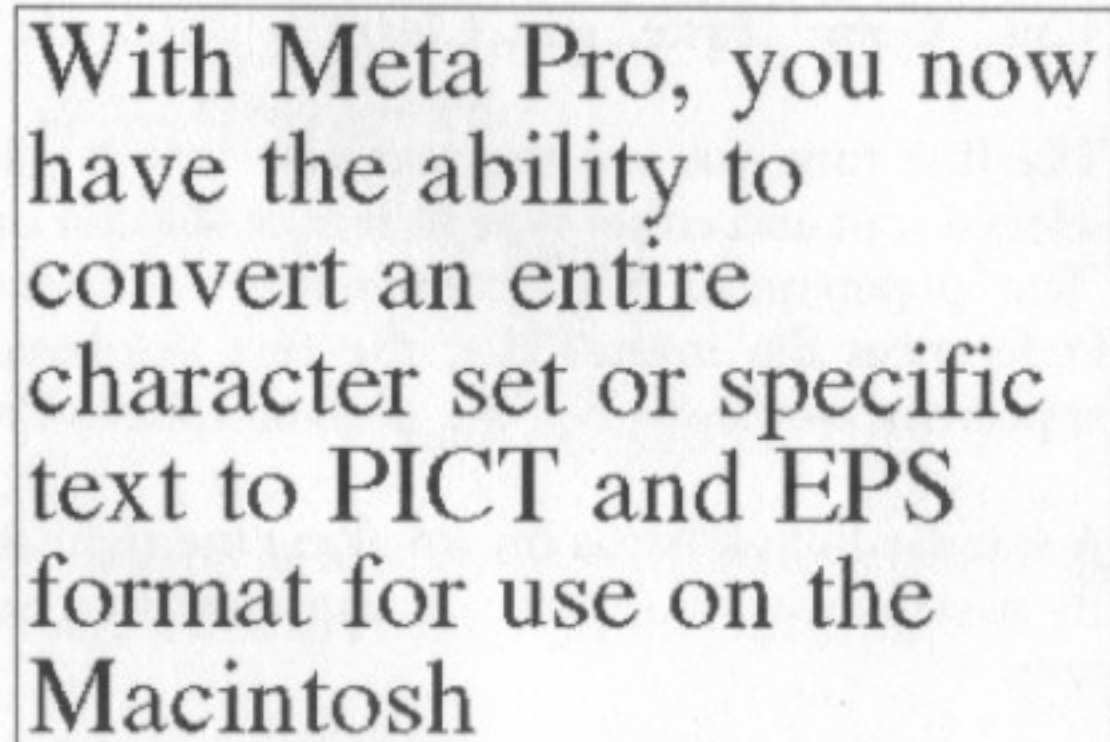
The "From a file..." option is provided to allow you to import a "Text only" file from applications such as Microsoft® Word, MacWrite®, and TeachText.

- Choose "From a file..."

This presents the standard file selection dialog, which allows you to choose a text file (to read into the text box). The file selection dialog works in the standard fashion, so you can change drives, eject disks, open a file, or cancel.



When you choose the file, Meta Pro displays the text in the text edit box.



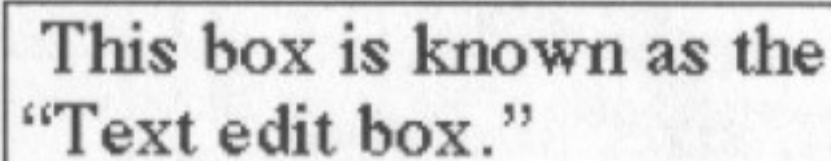
With Meta Pro, you now have the ability to convert an entire character set or specific text to PICT and EPS format for use on the Macintosh

**Note:** You can change text files simply by clicking on "From a file..." again and selecting another text file.

## Type your own

The "Type your own" option allows you to determine the text that Metamorphosis Professional converts. To utilize this option, simply type the text you wish to convert in the Meta Pro text edit box.

☒ **Display selected font**



This box is known as the "Text edit box."



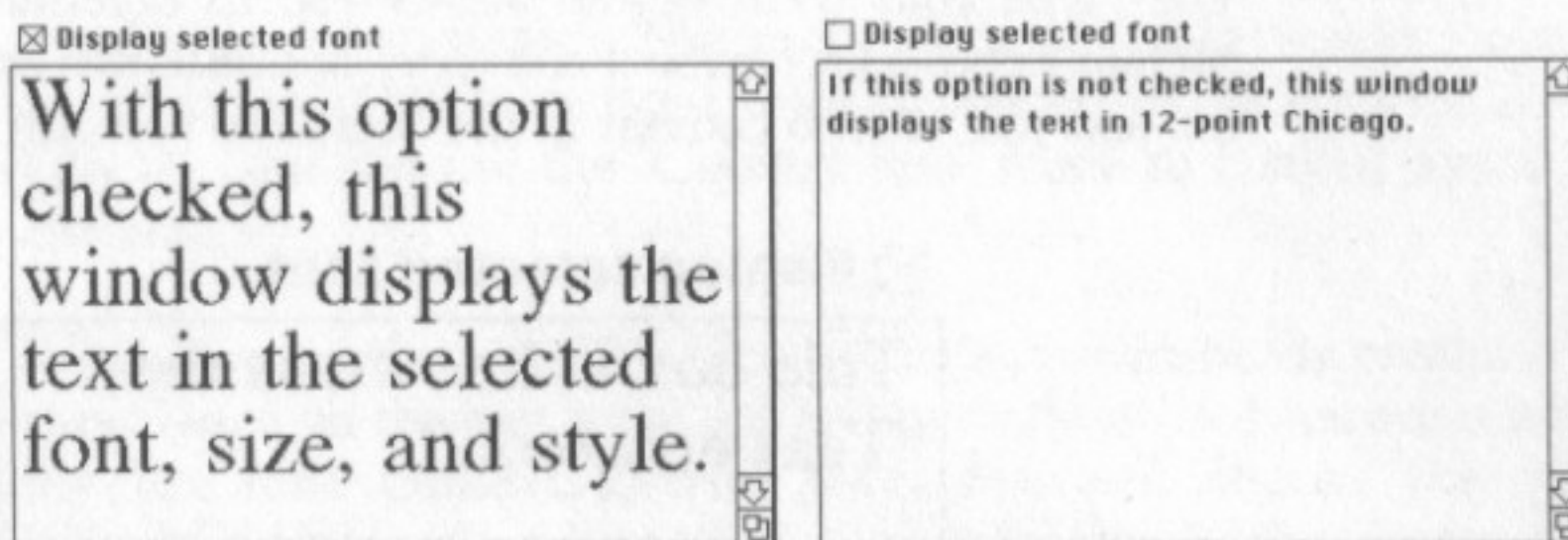
The text edit box is directly below the "Display selected font" checkbox and is always displayed when the "Convert text" option is checked. The text box supports all the standard Macintosh editing features, including "Cut," "Copy," "Paste," and "Clear."

The first time you see the text edit box, it will be empty. Once you select a font and either type in text or select a different option from the "Text" popup menu, it will contain text. Additionally, the Metamorphosis Preferences file insures that the text displayed in this box will also appear the next time you use Metamorphosis Professional.

A standard scroll bar is drawn along the right side of the text edit box. By moving the scroll bar, you can view long sections or large sizes of text.

## Display selected font

By checking this option, Meta Pro displays the text edit box in the actual font, style, and size (up to 72 points) selected. If this box is not checked, or if the bitmap file is not available, the text will be shown in Chicago 12-point.



**Note:** Not displaying the selected font can be useful in instances where you are converting larger point sizes that need to be scrolled to view.

## Things you should know about using the PICT format

Although many programs read the PICT format, some programs do it better than others. Among drawing programs, MacDraw II, Canvas 2, and FreeHand 3 seem to be among the most trouble-free. If the program you use to open PICT files or paste PICT images into seems to exhibit problems (such as crashes, hangs, or missing data), there are several things you can do.

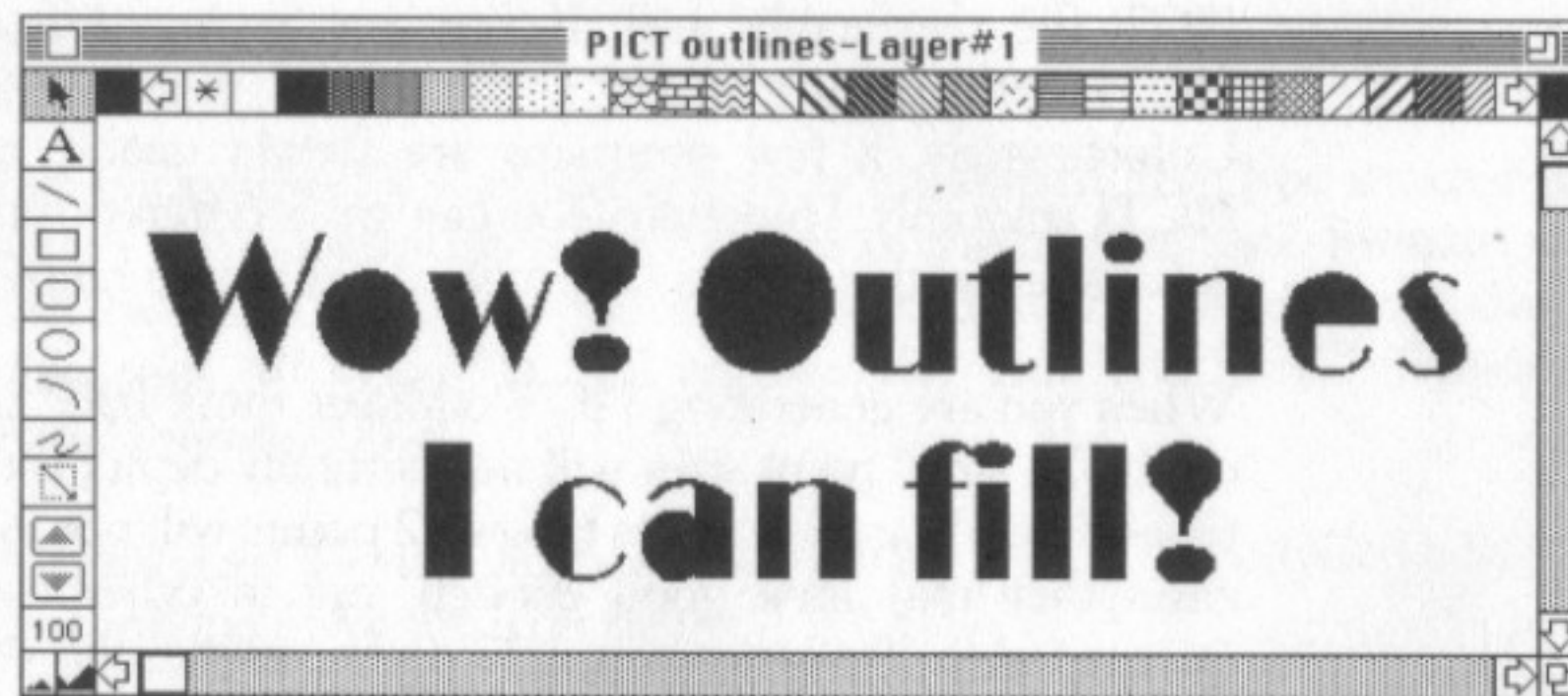
First, don't give your program too much text at one time. PICTs will work best with as few words used at one time as possible. So if your program crashes when you attempt to paste in 100 letters, try to convert and paste in the same text ten letters at a time. Then you can position them properly once they have all been pasted in. In addition, some programs don't do too well with pasted PICT images, but will open a PICT file reasonably well. If you are having difficulties pasting in PICTs, try creating a PICT file rather than using the clipboard. Unfortunately, a few programs are simply unable to render pasted PICTs smoothly. Hopefully, you can try a different program if you are dissatisfied with a particular program's ability to render PICTs.

When you are generating PICT outlines, think *BIG*. Due to the nature of PICTs, small point sizes will not faithfully depict the original character outlines. In general, sizes below 72 points will not look right. In some cases they may look good enough, but in other cases they will be unacceptable. Try generating a 12 point sample, and you'll see what we mean. Happily, most every program that accepts PICTs allows them to be smoothly scaled. So if you really need a good-looking PICT at 12 points, generate one at 48 points, paste it into your graphics program, and scale it down to 12 points. If that still doesn't look acceptable, try generating at 72 points, or even 96 points. Don't be afraid to even try sizes like 300 or 400 points; sometimes that's what it will take to get great looking outlines. By trying a few different combinations of sizes and scales, you will find a solution which looks great. In contrast, EPS files look and print well at any point size you specify.



If you want the text Meta Pro generates to look just like regular text once it's in a graphics program, there are a couple of things to be sure to do. Let's say that you want to use text from Meta Pro in your MacDraw illustration, maybe so you can get properly kerned characters, or because you need type that's larger than 127 points. The best time to make adjustments is immediately after pasting the outlines into a graphics program because everything is automatically selected for you. Text is pasted in with no fill, and a black outline. First choose a fill of black (assuming you want black text). Then, with everything still selected, remove the outline by choosing a pen size of zero. If the outline is not set to zero, the characters will appear bolder than they should. This is useful for special effects, and you can get all sorts of interesting results using different pen sizes.

But for now let's say you want your outlines to look like regular text. At this point, you might have something like this:



You can see that all the holes are filled in. This is because MacDraw II doesn't support what's known as "composite paths," which are what character outlines really are. To get around this, you need to select the paths which represent the "holes" in the characters, and fill them with a background color or pattern. That creates the illusion that you can see through those areas.

All you have to do is make sure nothing is selected, then click on the top "hole" in the "o." It becomes selected, so you can then fill it with white.

**Wow! Outlines  
I can fill!**

If the outer outline of the "o" became selected instead, use the command "Move To Back" in the Arrange menu. Then click in an empty area so that nothing is selected, and then click in the "hole" again. This time it should become selected.

Once you select and fill all the holes with white, you'll see something like this:

**Wow! Outlines  
I can fill!**

If you are converting a bunch of words, or a few words at a large size, you might be interested in word wrap. Meta Pro will automatically start placing letters on the next line when the current line of characters gets wider than three standard pages. Usually this isn't a problem, since you can move and reposition the outlines any way you choose. If you are worried about line endings, place carriage returns where they ought to go when you enter your text into Meta Pro's text edit box. Then the line won't get so long that Meta Pro will have to wrap it.

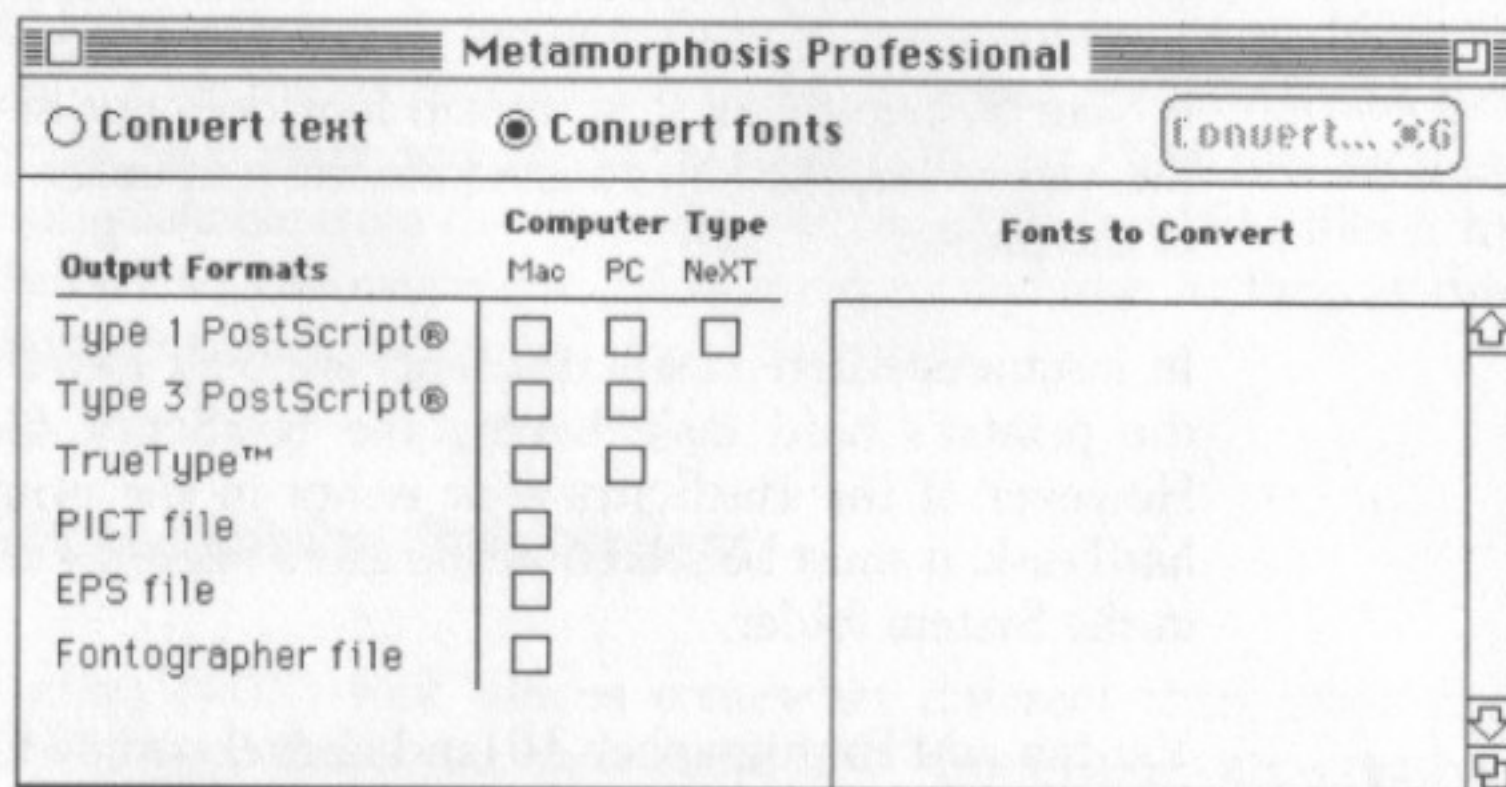


One final note: Although Meta Pro gives you the ability to convert the characters in a text file to a PICT, you should use this function with care. If you convert an entire page of small text to PICT, chances are that no graphics program will be able to accept it. Try to convert only a couple of lines of text at a time, and you will have a much higher rate of success. This isn't really much of a hindrance, since usually you will need only a few characters, or maybe just a headline, in PICT format.

# CHAPTER THREE

## Convert fonts

The "Convert fonts" mode allows you to convert fonts into ten different output formats.



There are three basic steps in the "Convert fonts" mode.

1. Select your font(s).
2. Choose the font formats.
3. Convert.

Yes, it's that simple! You can convert and be using a font in five minutes or less!



Before you can convert fonts, you must select the font(s) you want to convert. Since fonts can be generated individually or in batches, you can select as many as you like. Keep in mind that the time of the generation process will vary according to the number of fonts and options you select.

## **Which fonts do you select?**

Meta Pro allows you to select a font by choosing its bitmap or TrueType font file or Fontographer database file. The name of the printer font file is stored in the bitmap font, thus linking the bitmap font to its corresponding PostScript printer font file. We recommend that your PostScript and bitmap files be in the same folder. Your PostScript files can also be in your System folder. If a bitmap font does not have a related outline file, you will not be able to generate the font unless it is already resident in the printer.

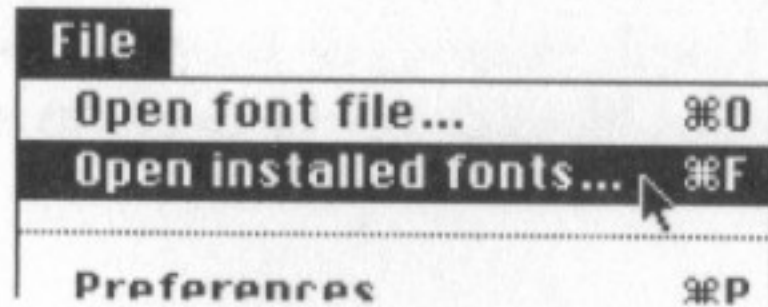
In instances where PostScript fonts are built into the printer or are on the printer's hard disk, having the PostScript file is not necessary. However, if the PostScript font is not in the printer or the printer's hard disk, it must be stored in the same folder as its bitmap font file or in the System folder.

You can add Fontographer 3.0 (and above) outline font database files to the font conversion list with the "Open font file..." item in the File menu. You can open all of your installed fonts by using the "Open installed fonts..." item in the File menu. This includes fonts installed with Suitcase II® or Master Juggler® (or similar programs).

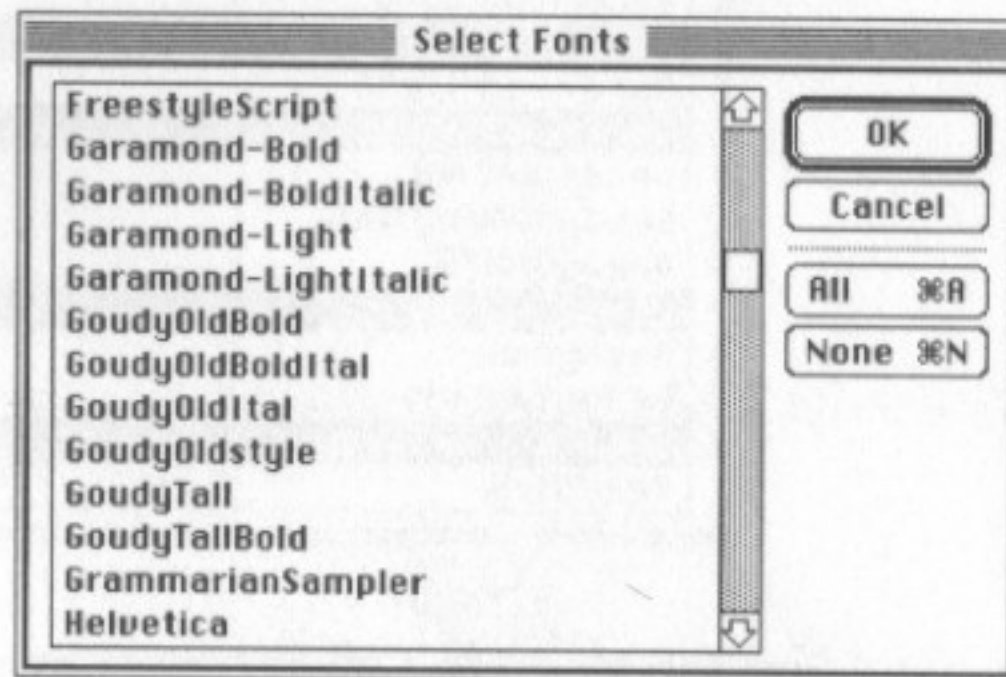
**Note:** Type 1 specifications restrict Meta Pro from generating Type 1 fonts that contain stroking or grayscale fills. Fonts created with Altsys Art Importer cannot be converted because of this restriction.

## To open an installed font:

- Choose "Open installed fonts..." from the File menu or type ⌘F.



This presents the "Select Fonts" dialog box which allows you to choose any font installed in your System file or fonts installed with Suitcase II, Master Juggler, or programs like them.



All your installed PostScript and TrueType fonts are listed in the "Select Fonts" dialog. You have the option of selecting one, several, or all fonts from this dialog.



### To select a font:

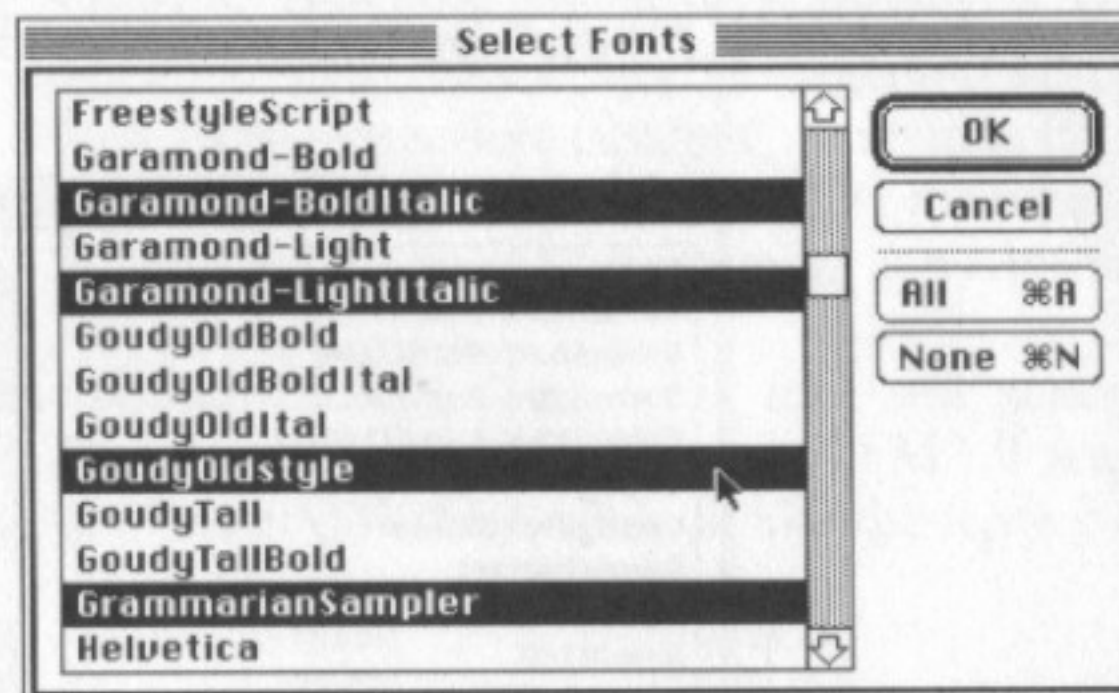
- Click on its name and then click the "OK" button.

OR

- Double-click on its name to select a single font and close the "Select Fonts" window.

### To select more than one font:

- Hold down the Shift key while you make your selections.



- You can also select all the fonts by clicking the "All" button or by typing ⌘A.

The font name(s) you select will appear in the Meta Pro font list. Shift-clicking on a selected font deselects it.

**Note:** Your original fonts will not be affected by this process since you are merely accessing that font's information without making any changes to the original file.

The next section describes how to select fonts which are not installed. If you do not wish to add these fonts to your conversion list, you can proceed to page 40.

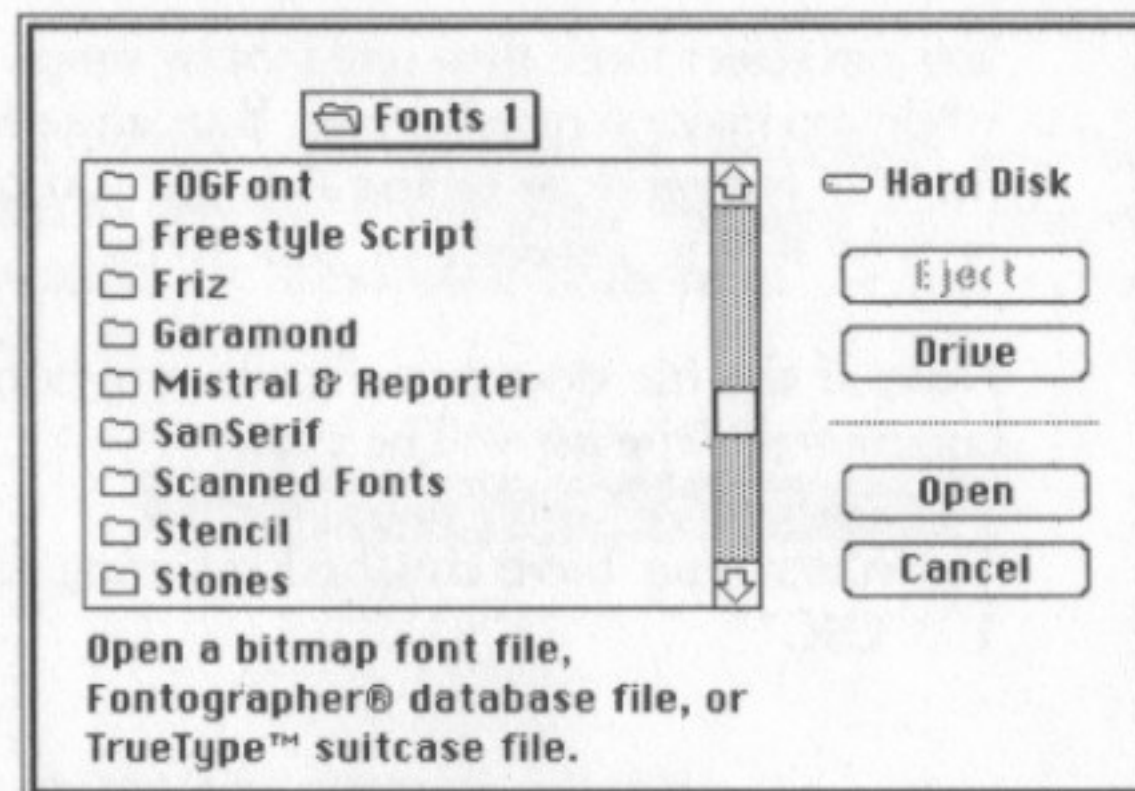
## To open a font file:

You may have your fonts stored in specific folders or locations different from those installed in your System. In this instance, you would follow this procedure to open a font file.

- Choose "Open font file..." from the File menu or type ⌘O.



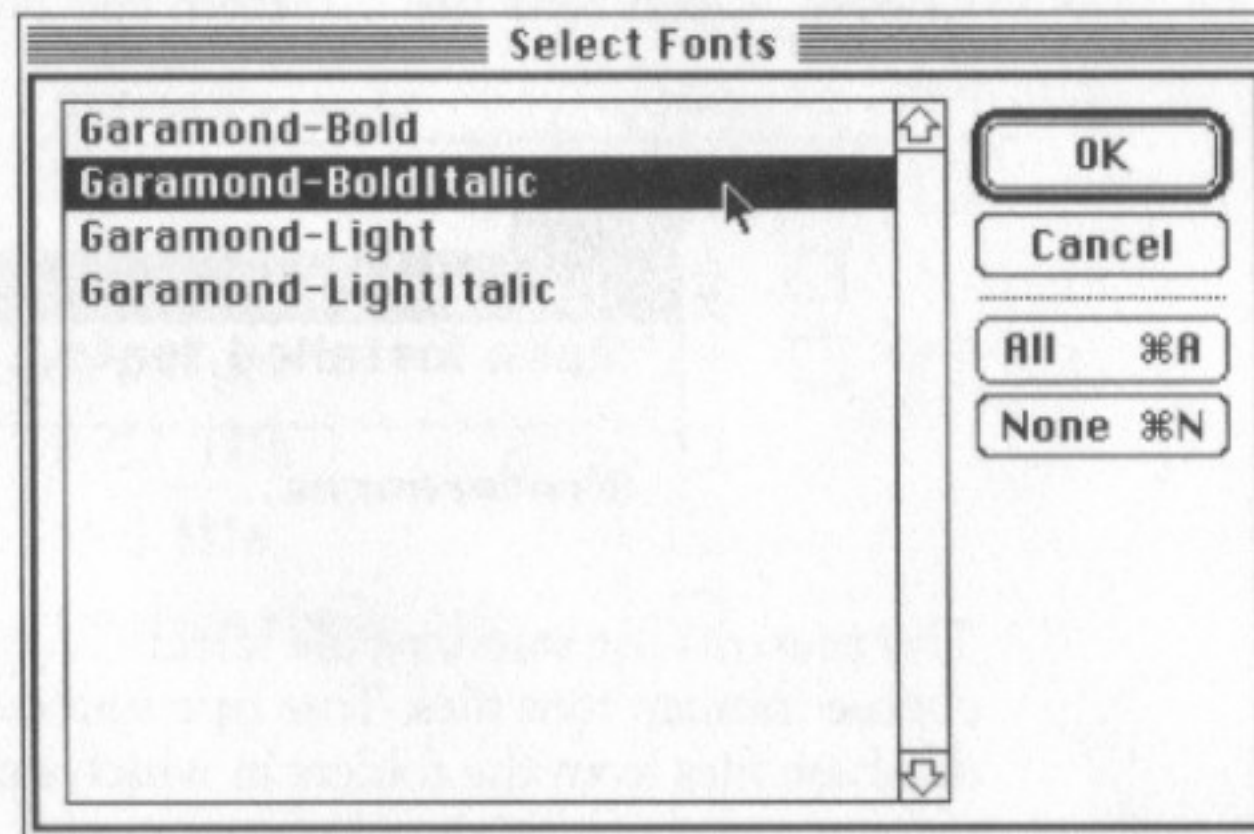
This presents the standard file selection dialog, which allows you to choose bitmap font files, TrueType suitcase files, and Fontographer database files from the folders in which they are stored.





Meta Pro will list only associated PostScript or TrueType fonts in the file you open. You have the option of selecting one, several, or all fonts from the "Select Fonts" dialog.

- Choose the font you wish to open by clicking on its name.

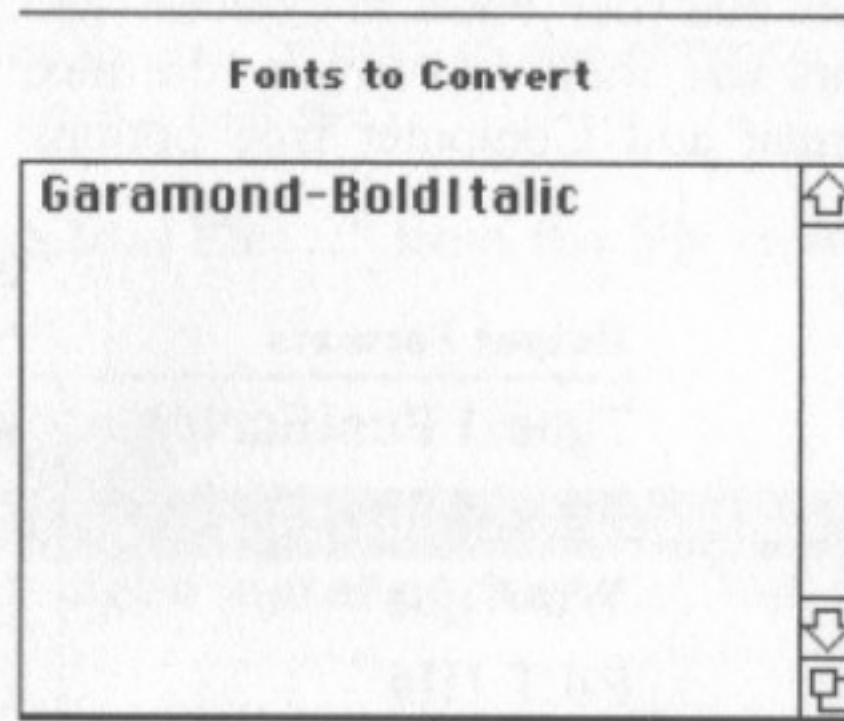


You can select more than one font by simply holding down the Shift key while you make your selections. You can select all of the fonts by clicking the "All" button or by typing ⌘A. Or you can click on the "None" button or type ⌘N to deselect all your fonts.

**Note:** If the file does not contain any bitmap fonts that have related outline fonts, the list will be empty.

- When you have finished selecting fonts from this folder, click "OK."

The font name(s) you select will then appear in the Meta Pro "Fonts to Convert" list.



You can continue adding fonts by repeating the previous procedure or you can begin generating your fonts now.

## Removing fonts

After you have selected your fonts for conversion, and you decide you do not wish to generate a particular font, you may remove it from the font conversion list. Removing fonts from the font conversion list is very simple.



- Click on the font name to select it.
- Choose "Clear" from the Edit menu or press either the clear key or the delete key.

*Note:* This will not affect your currently saved or installed fonts.



## Choosing Output Formats

Now that your "Fonts to Convert" list contains a complete list of all the fonts you want to convert, the next step is to choose the "Output Format" and "Computer Type" options.

Output Formats	Computer Type		
	Mac	PC	NeXT
Type 1 PostScript®	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Type 3 PostScript®	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
TrueType™	<input type="checkbox"/>	<input type="checkbox"/>	
PICT file	<input type="checkbox"/>		
EPS file	<input type="checkbox"/>		
Fontographer file	<input type="checkbox"/>		

Ten output formats are provided in the "Convert fonts" mode. You can select any of these options.

### To select an option:

- Click on the option's checkbox.

An "X" indicates that the option is selected.

### To deselect an option:

- Click on the checked option box to deselect it.

## Output Formats

### Type 1 PostScript

These options are provided to generate Type 1 PostScript language fonts for the Macintosh, IBM-compatible PCs, and NeXT computers.

#### Mac

Metamorphosis Professional generates an ATM-compatible standard Macintosh Type 1 PostScript language font file with hints. This font file can be used for both automatically downloadable fonts or fonts that are to be downloaded to the printer's hard disk.

A converted GoudyOldstyle Type 1 Macintosh font will be named "GoudyOld" and look like the icon below.



Meta Pro automatically generates an "AFM" file which is named and looks like the icon below.



GoudyOldstyle.afm

Whenever you generate Type 1 or Type 3 fonts, Meta Pro automatically generates an *Adobe Font Metrics* (AFM) file. This is a file for storing font metrics information in TEXT format (font metrics include character widths, kerning pairs, and character bounding boxes). Certain text handling programs use this file. Additionally, Fontographer 3.2 can use this file to import kerning pairs into a font. Install it only if specified by applications which require it. Otherwise, you may ignore the AFM file.

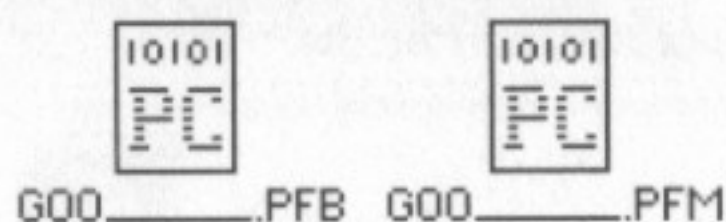


**Note:** Since it is possible to generate both Type 1 and Type 3 PostScript fonts at the same time (and they have the same naming rules), Metamorphosis will add a "." to the file that is generated last to avoid naming conflicts. Therefore, if you generate Type 1 and Type 3 fonts for GoudyOldstyle, the PostScript files will be named "GoudyOld" and "GoudyOld." respectively. You must change the name before you install it by removing the "." at the end of the font name. You can determine which file is which by examining each file's icon. If you converted a TrueType font, Meta Pro will automatically generate a standard suitcase file. In our example, it would be named "GoudyOldstyle.bmap."

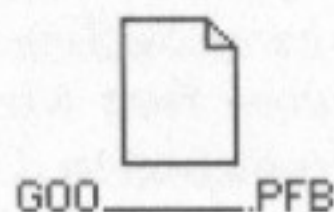
## PC

Meta Pro generates standard PC Type 1 PostScript language fonts which are compatible with Adobe Type Manager (ATM) running under Windows 3.0 on IBM-compatible personal computers (PCs). Meta Pro automatically generates an AFM file and a PFM file which are used on the PC. All PC files adhere to PC font naming conventions.

A converted GoudyOldstyle Type 1 PC font will generate two files named "GOO\_\_\_\_.PFB" and "GOO\_\_\_\_.PFM." If you have Apple File Exchange on your disk they will look like the icons below.



If you don't have Apple File Exchange on your disk, your icon will look like the generic blank page icon below.



The "PFB" at the end of the font name stands for **Printer Font Binary** and represents a PC Type 1 font.

The "PFM" at the end of the font name stands for **Printer Font Metrics** and represents a PC Type 1 font metrics file.

Meta Pro also generates an "AFM" file named "GOO\_\_\_\_.AFM" which looks like the icon below.



**Note:** If you already have a PC font file for GoudyOldstyle in the folder that you generate to, Meta Pro will name your new files "GOO\_\_\_\_.PFB•," "GOO\_\_\_\_.PFM•," and "GOO\_\_\_\_.AFM•." Before you can use the PostScript font file on the PC, you must remove the "•" extension on the end of the file name. Additionally, if two of the PC fonts you are converting have the same name, Meta Pro will put the "•" after the second one it generates. Before you install this font on the PC, you must rename the second PFB and PFM files so they are distinguishable from the first font. Naming PFB and PFM files is totally arbitrary so you can name them anything you like, as long as the last character before the period is an underscore.

## PC File Naming Conventions

Naming of PC font files is somewhat different than other naming conventions. Once you understand how these names are created, you can usually determine what the font name will be, based on its file name. PC files have cryptic names consisting of eight characters which are followed by the file extension type. The font file names are created as follows:

- Take the first two characters of the font name. In the case of GoudyOldstyle, they are "GO." If the font was Palatino Bold Italic, the first two letters in the file name would be "PA."
- The next five letters of the file name are composed of the remaining uppercase letters from the font name in the order of their appearance. This would make the name for GoudyOldstyle be "GOO." If the font was Palatino Bold Italic, the first four letters in the file name would be "PABI."



- Underscores represent remaining free spaces. Therefore, Goudy Oldstyle would be named "GOO\_\_\_\_\_" followed by the extension name. The font Palatino Bold Italic would be named "PABI\_\_\_\_\_" followed by the extension.
- The eighth character must always be an underscore.

The extension names are based on this table.

<b>PC Naming Conventions Table</b>	
<b>File Type</b>	<b>Extension</b>
Type 1 font	.PFB
Type 3 fonts	.PFA
AFM File	.AFM
Metrics File	.PFM

**Example:** A Type 1 font generated from "GoudyOldstyle" would be called "GOO\_\_\_\_\_.PFB." A Type 1 font generated from Palatino Bold Italic would be "PABI\_\_\_\_\_.PFB."

An AFM file generated from "GoudyOldstyle" would be called "GOO\_\_\_\_\_.AFM." An AFM file generated from Palatino Bold Italic would be "PABI\_\_\_\_\_.AFM."

**Note:** We want to emphasize (and deny any responsibility for thinking up something this confusing!) that Altsys adheres to standard PC naming conventions when Metamorphosis Professional assigns names to PC font files.

For information on how to install your fonts onto a PC disk using Apple File Exchange, refer to Altsys' *Font Installer Guide*.

## NeXT

Meta Pro generates a Type 1 PostScript font file that can be used on NeXT computers.

A converted GoudyOldstyle Type 1 NeXT font will be named "GoudyOldstyle.NeXT" and look like the icon below.



GoudyOldstyle.NeXT

Meta Pro automatically generates an "AFM" file which is named and looks like the icon below.



GoudyOldstyle.afm

**Note:** If you already have a NeXT file for GoudyOldstyle in the folder that you generate to, Meta Pro will name your new files "GoudyOldstyle.NeXT•" and "GoudyOldstyle.afm•."

**Important:** Before you can use the PostScript font file on the NeXT, you must remove the ".NeXT•" extension on the end of the file name and the "•" after the AFM file name.



## Type 3 PostScript

This option is provided to generate Type 3 PostScript language fonts for the Macintosh and IBM-compatible PCs. Type 3 fonts can contain stroked and filled characters. They can be utilized by programs like Brøderbund TypeStyler and Quark XPress and can also be useful for PostScript clone printers that don't understand Type 1.

**Note:** Type 3 PostScript language fonts will not be hinted. If you wish to apply hints, you can use Fontographer version 3.2 which can apply Type 3 PostScript hints for screen and printer fonts automatically.

### Mac

Metamorphosis Professional generates a standard Macintosh Type 3 PostScript font.

A converted GoudyOldstyle Type 3 Macintosh font will be named "GoudyOld" and look like the icon below.



Meta Pro automatically generates an "AFM" file which is named and looks like the icon below.



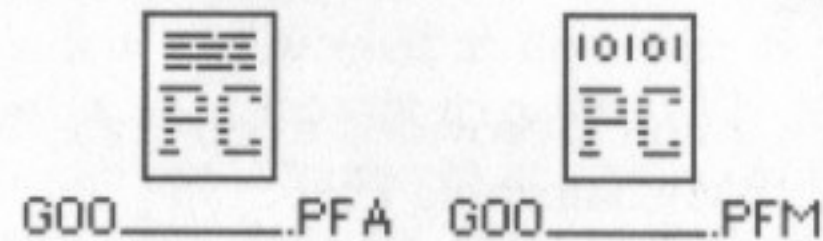
**Note:** Since it is possible to generate both a Type 1 and Type 3 PostScript font at the same time (and they have the same naming rules), Metamorphosis will add a "." to the file that is generated last to avoid naming conflicts. Therefore, if you generate a Type 1 and Type 3 font for Goudy Oldstyle, the PostScript files will be named "GoudyOld" and "GoudyOld." respectively. You must change the name before you install it by removing the "." at the end of the font name, or the printer will not be able to find the font.

If you converted a TrueType font, Meta Pro will automatically generate a standard suitcase file. In our example, it would be named "GoudyOldstyle.bmap."

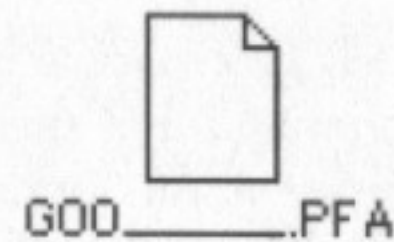
## PC

Metamorphosis Professional generates a standard PC Type 3 PostScript language font. The PC file adheres to PC font naming conventions.

A converted GoudyOldstyle Type 3 PC font will have two files named "GOO\_\_\_\_.PFA" and "GOO\_\_\_\_.PFM." If you have Apple File Exchange on your disk they will look like the icons below.



If you don't have Apple File Exchange on your disk, your icon will look like the generic blank page icon below.



The "PFA" at the end of the font name stands for *Printer Font ASCII*. This file contains only standard ASCII characters.

The "PFM" at the end of the font name stands for *Printer Font Metrics*.

Meta Pro automatically generates an "AFM" file which (for GoudyOldstyle) is named "GOO\_\_\_\_.AFM" and looks like the icon below.





**Note:** If you already have a PC file for GoudyOldstyle in the folder that you generate to, Metamorphosis Professional will name your new files "GOO\_\_\_\_.PFA•," "GOO\_\_\_\_.PFM•," and "GOO\_\_\_\_.AFM•." Before you can use the PostScript font file on the PC, you must remove the "•" extension on the end of the file name.

For more information about PC font file naming conventions, see "PC Font Naming Conventions" on page 44. For information on how to install your fonts onto a PC disk using Apple File Exchange, refer to Altsys' *Font Installer Guide*.

## TrueType

This option is provided to generate TrueType fonts for the Macintosh and IBM-compatible PCs.

### Mac

Metamorphosis Professional generates a standard TrueType suitcase file which may contain all of the bitmaps in the original font. Bitmaps will only be included if this option is checked in the "Preferences" dialog (See page 57). This file will contain the TrueType SFNT (Scaleable FoNT) resource file.

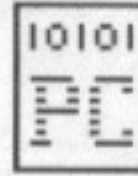
A converted GoudyOldstyle font will be named "GoudyOldstyle.suit" and will look like the icon below.



GoudyOldstyle.suit

## PC

Meta Pro generates a TrueType file which is compatible with versions of Windows which support TrueType. The "TTF" at the end of the font name stands for *TrueType File*.



GOO\_\_\_\_\_TTF

For information on how to install your fonts onto a PC disk using Apple File Exchange, refer to Altsys' *Font Installer Guide*.

## PICT file

### Mac

The "PICT File" option is provided to generate PICT format files for the whole font. Meta Pro creates an object-oriented PICT that stores the points and paths of the characters for use in drawing programs. If you don't want to convert the whole font into a PICT file, you can use the "Convert text" mode to convert just a few characters.

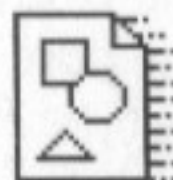
Programs such as MacDraw and MacDraw II, Canvas, Claris CAD, DeskDraw, and Aldus FreeHand can read this file format directly for editing purposes. So now you can reshape or distort your characters, change the line size, or fill them with specific colors or patterns.

**Note:** PICT outlines are not always absolutely identical to their PostScript counterparts; there is a small amount of approximation involved in the conversion. For more information about PICTs, see page 29.

When you generate a PICT file, Meta Pro automatically creates a file name based on the font name you are converting. So if you are convert-



ing the font GoudyOldstyle, Meta Pro will choose the name "GoudyOldstyle.pict" and it will look like the document icon below.



GoudyOldstyle.pict

**Note:** If you already have a PICT file named GoudyOldstyle.pict in the folder that you generate to, Meta Pro will name your new file "GoudyOldstyle.pict•" so that you don't overwrite (erase) the old file.

## EPS file

### Mac

The EPS option generates Adobe Illustrator 1.1-style EPS (Encapsulated PostScript) format files. Programs such as Aldus FreeHand and Adobe Illustrator can read the EPS file format directly for editing purposes. And once you open your EPS file, you can add or delete points, reshape or distort characters, change the stroke weight, or fill characters with a specific color or pattern. You can even alter a character's shape to create swash caps. If you don't want to convert the whole font into an EPS file, you can use the "Convert text" mode to convert just a few characters.

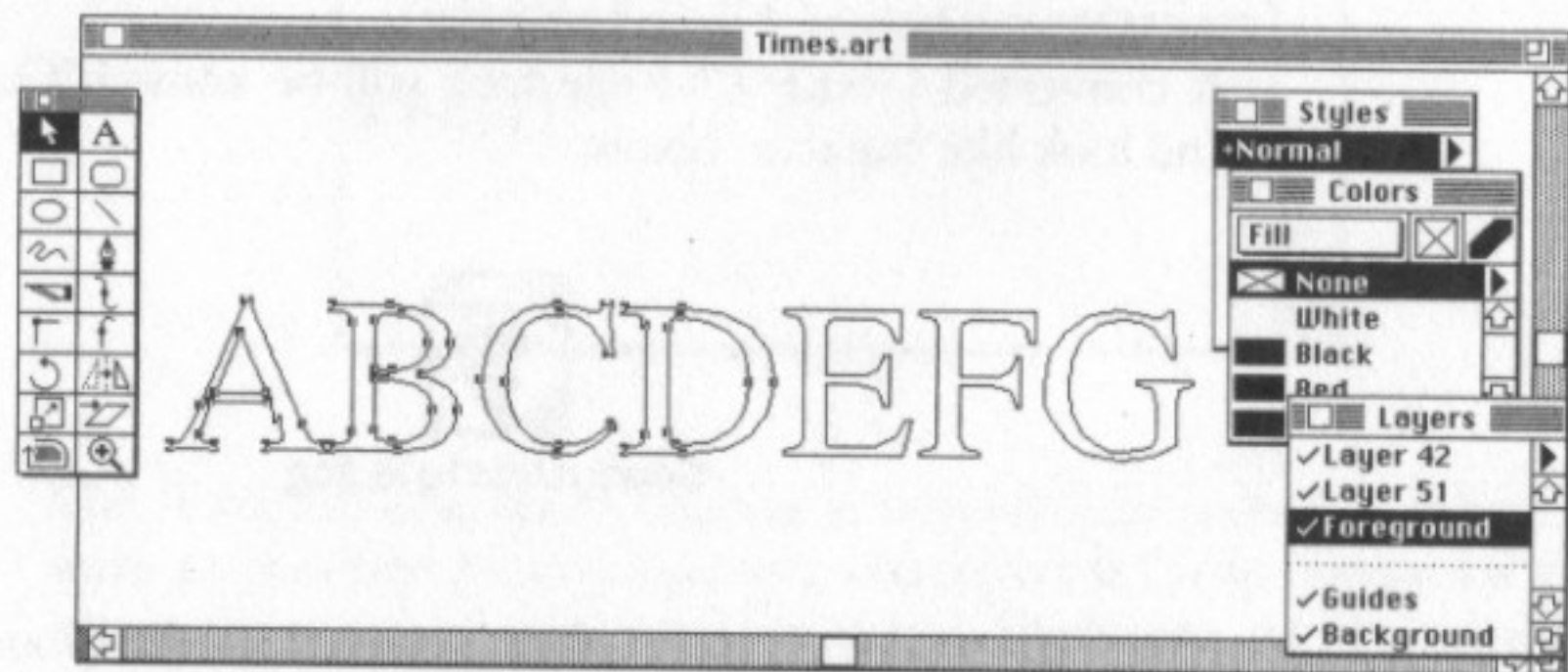
When you generate an EPS file, Meta Pro automatically creates a file name based on the font name you are converting. So if you are converting the font GoudyOldstyle, Meta Pro will choose the name "GoudyOldstyle.art" and it will look like the the Adobe Illustrator 1.1 document icon below.



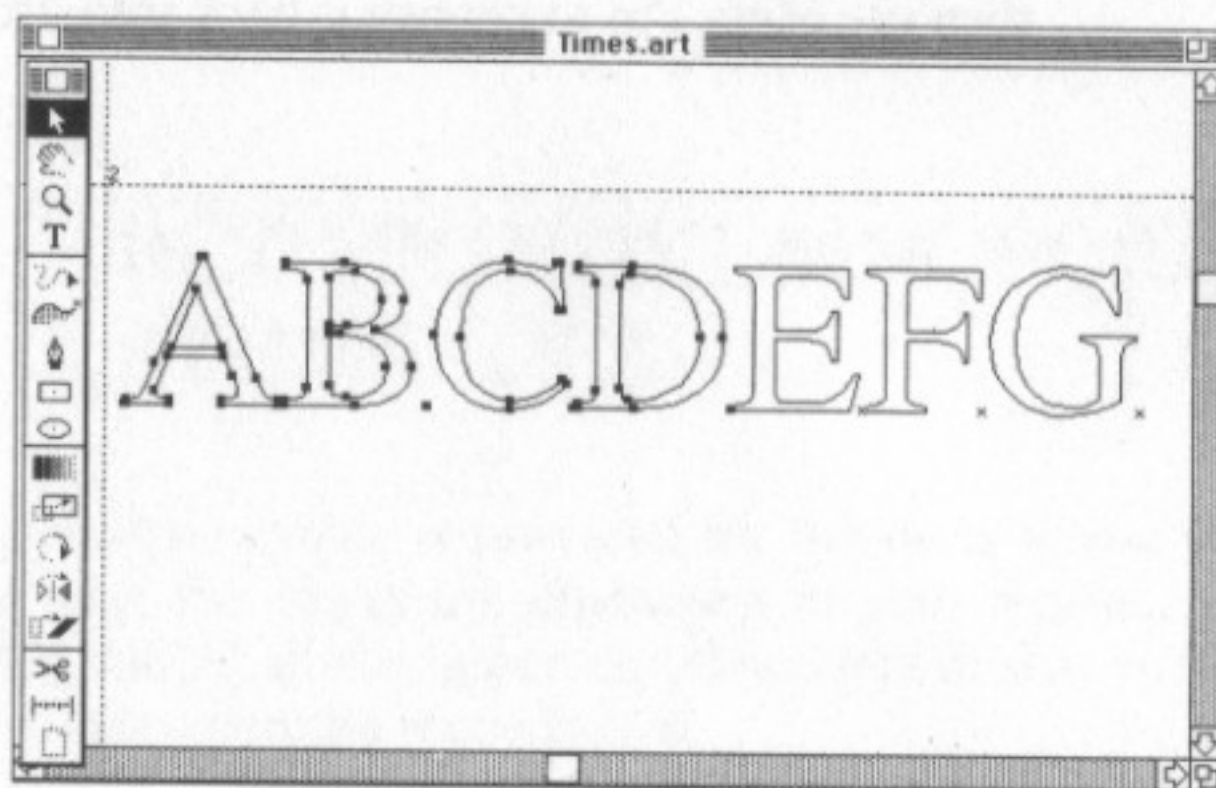
GoudyOldstyle.art

**Note:** If you already have an EPS file named GoudyOldstyle in the folder that you generate to, Meta Pro will name your new file "GoudyOldstyle.art" so that you don't overwrite (erase) the old file.

The illustration below shows a converted font that was generated in EPS format and then opened using Aldus FreeHand's "Open file..." item from the File menu. The letters "A" through "D" are selected. All the points and BCPs can be activated and are ready for use. All the functionality of FreeHand can be applied to your outlines.



The illustration below shows a converted font that was opened using Adobe Illustrator 88. The letters "A" through "D" are selected. The small "x's" that appear between the characters allow you to line up the letters to comply with their origin and width point markers.





## Fontographer file

### Mac

This option is provided to generate Fontographer database files that can be edited in Fontographer 3.2, Altsys' professional font creation program. By combining this option with Fontographer, you have the additional capability of customizing your own professional fonts.

A converted Goudy Oldstyle font will be named "GoudyOldstyle.fog" and look like the icon below.



GoudyOldstyle.fog

**Note:** If you already have a Fontographer file for GoudyOldstyle in the folder that you generate to, Meta Pro will name your new file "GoudyOldstyle.fog•."

And by using Meta Pro, Fontographer users can now edit their TrueType fonts. Simply convert the TrueType font into a Fontographer file with Meta Pro, edit the font in Fontographer, generate a Type 1 font, and then use Meta Pro to change it back into TrueType!

When you open this file with Fontographer, it generates a 24-point bitmap for its font window. You will then see the standard font window that contains the complete font.



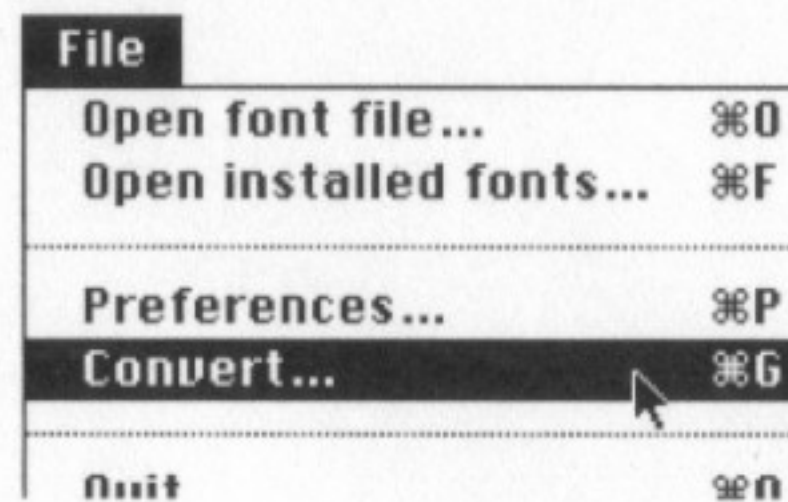
You will now be able to utilize all the features of Fontographer to tweak and manipulate the original outlines of your fonts.

## Converting fonts

Once you have selected your "Output Formats" and "Computer Types," there is only one thing left to do: Convert your fonts.

### To convert fonts:

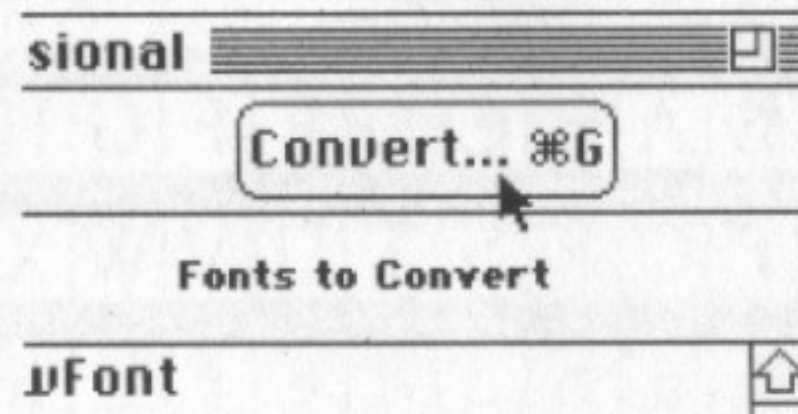
- Choose "Convert..." from the File menu or type ⌘G.



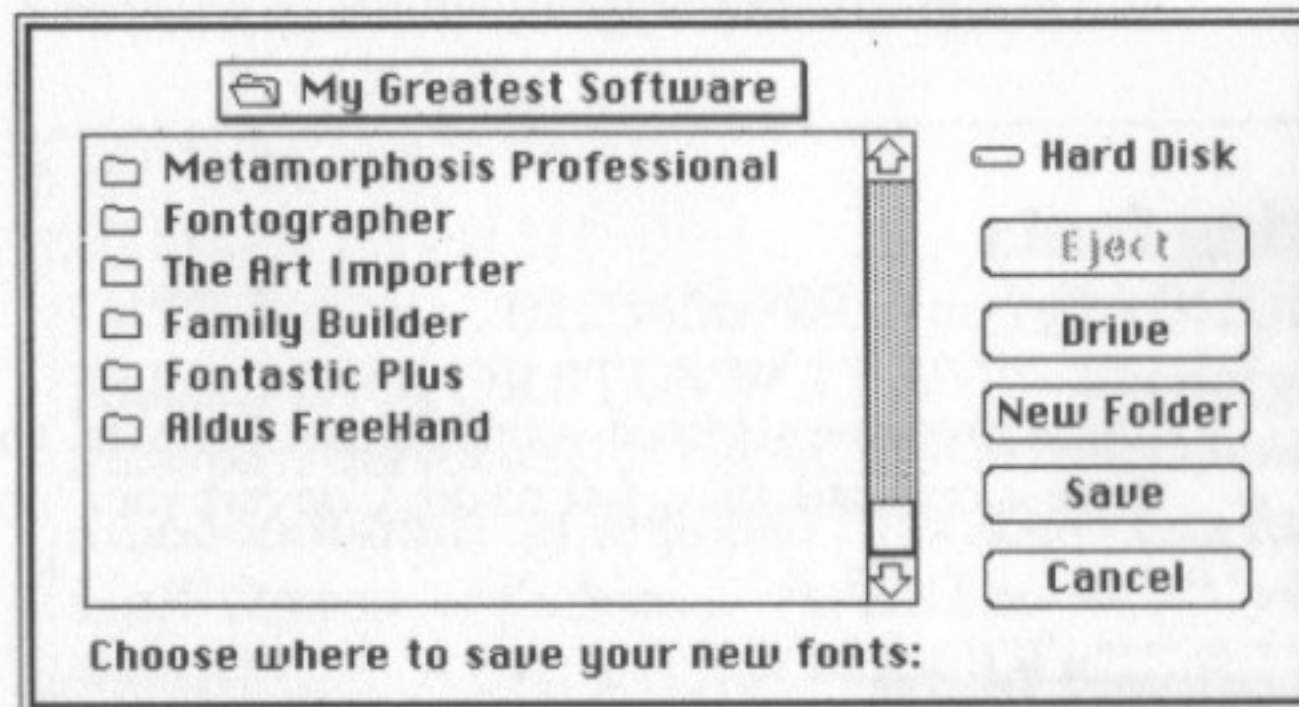


OR

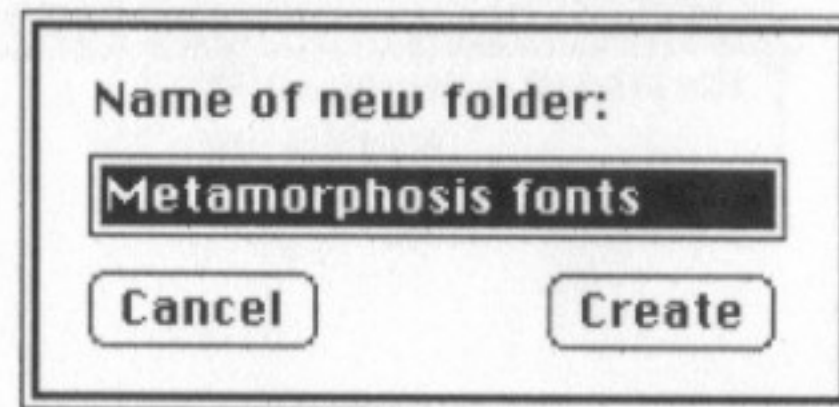
- Press the "Convert..." button in the upper right hand corner of the window.



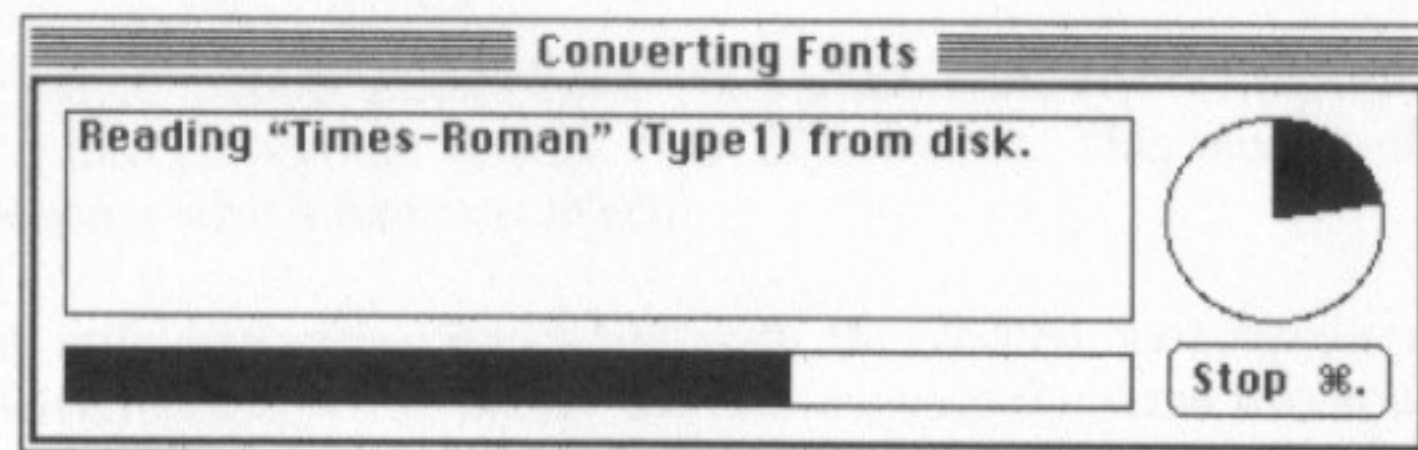
Metamorphosis Professional gives you the option of determining where you would like to store your new fonts.



If you press the "New Folder" button, Meta Pro will allow you to create a completely new folder and determine where you would like it to be placed.



Once you have chosen where you wish to store your fonts, a dialog box shows which font is being generated. A progress bar shows how the current font conversion is progressing. The pie graph on the right shows what portion of the overall font conversion process has completed.



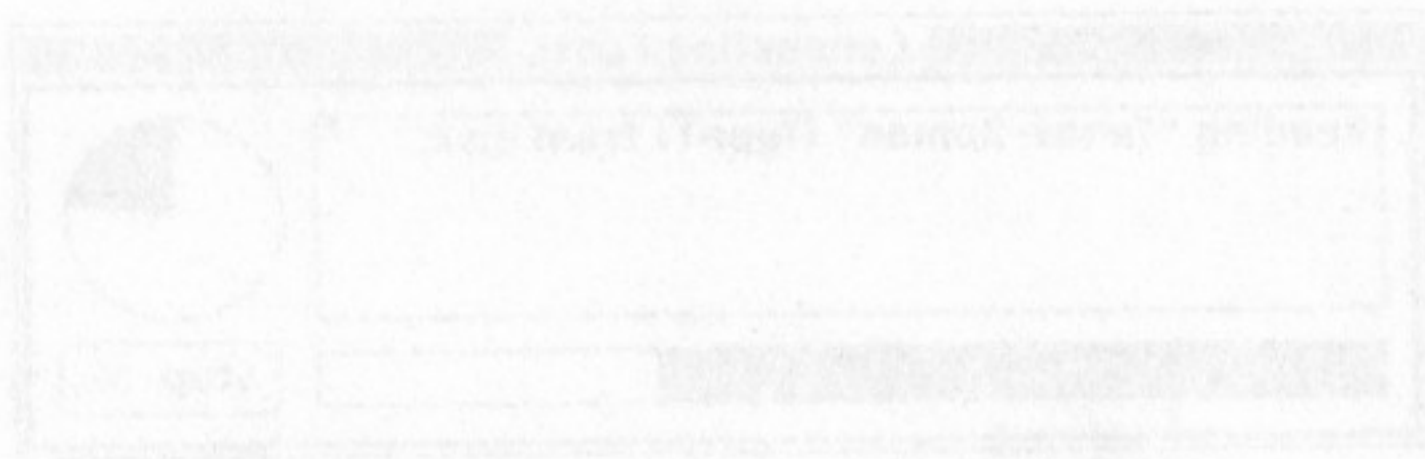
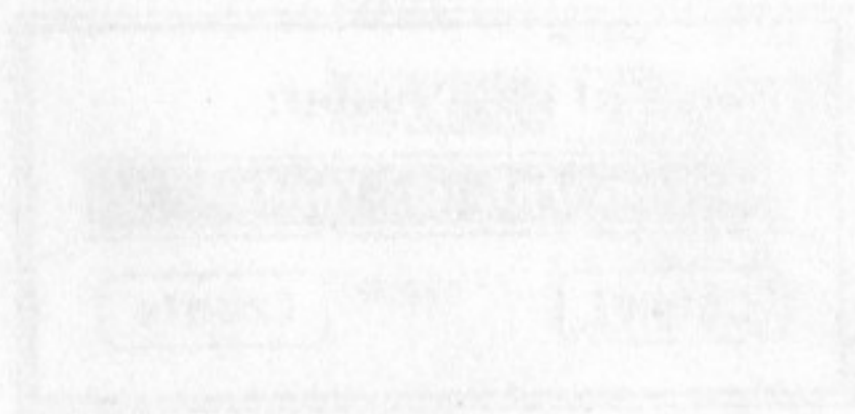
Meta Pro will clear fonts from the "Fonts to Convert" list as they finish converting. You can cancel the conversion process at any time by pressing the "Stop" button in the progress box or by pressing the command key and typing a period. Doing so does not get rid of any fonts that have already been generated, or remove any fonts from the "Fonts to Convert" list, but it does stop any further generation.

When you finish converting fonts, you can convert more fonts, change to the "Convert text" mode, or quit Meta Pro.

**Note:** If you generate a batch of fonts, the font generation procedure could be lengthy. If you are running MultiFinder or System 7, you can



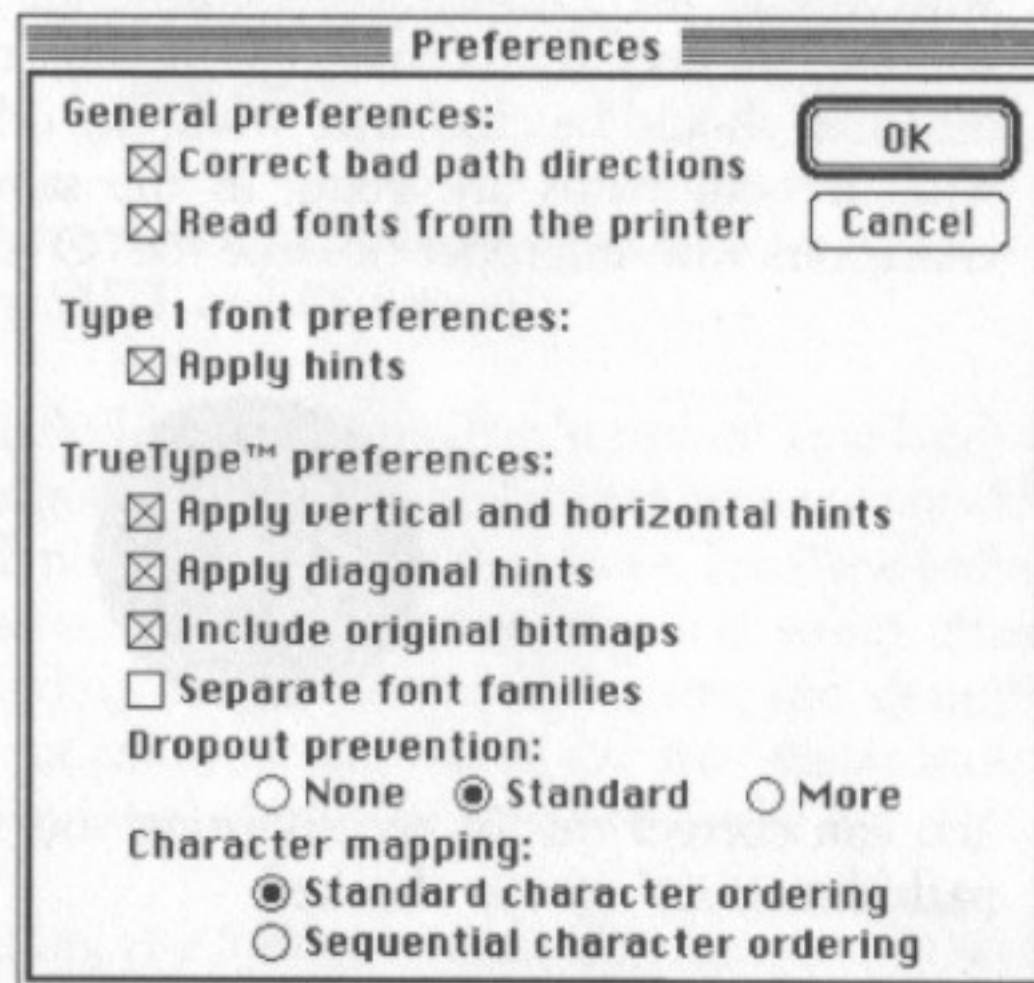
work on other projects since Meta Pro will run in the background. If you aren't running MultiFinder or System 7, you might want to select a batch of fonts and generate them all at once, during a lunch break, or maybe even overnight.



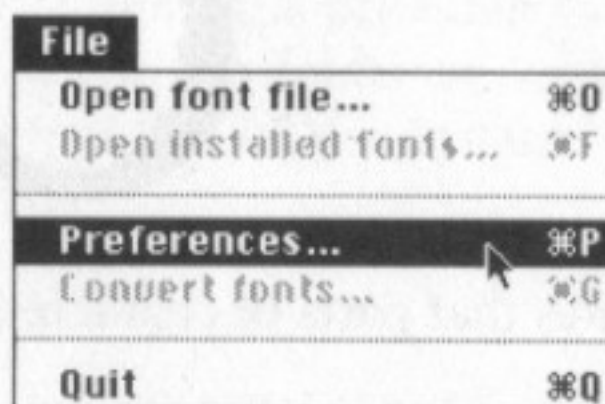
# CHAPTER FOUR

## Preferences...

The "Preferences" option allows you to control different aspects of the conversion process.



You access the "Preferences" dialog by choosing "Preferences..." from the File menu.





## General preferences:

The "General preferences" option provides control over some aspects of the Metamorphosis conversion process.

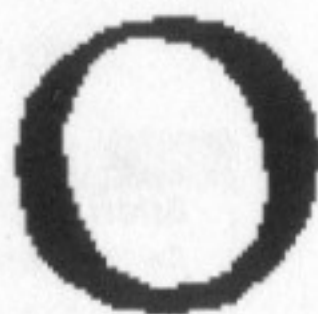
### Correct bad path directions

Characters consist of open and closed paths. When you print a character on a PostScript printer, the printer fills the outline of the character with a solid fill. This standard PostScript filling technique is called a winding number (or normal) fill. In this type of character, one path direction should be clockwise while the other should be counterclockwise. If both paths are going in the same direction, you will have characters with improper fills like the "O" shown here.



You can correct this by reconvert your font with the "Correct bad path directions" option checked.

### ☒ Correct bad path directions



This ensures that parts of characters which should be holes actually are holes.

You can turn off "Correct bad path directions" if you are converting an Adobe Type 1 font since these usually have correct path directions. If you are sure that your path directions are correct, you can turn this option off to save time. If you have a font that has a problem with path directions (or you just aren't sure), you should turn this option on.

**Note:** Path directions cannot be corrected in Type 3 fonts drawn with overlapping paths, incomplete paths, and points on top of each other. If you have Fontographer 3.1 or later, you can create and open the .fog file and make the necessary corrections to the problem paths.

## **Read fonts from the printer**

This option tells Meta Pro to look into the attached printer's RAM, ROM, or disk for the PostScript information when it doesn't find the font it wants on your hard disk.

You should uncheck this option if you don't have a PostScript printer attached or you only want Metamorphosis Professional to read fonts from your System and not automatically go to the printer to look for them.

You can also turn off "Read fonts from the printer" if you know that you will never need outlines from your printer or your printer's hard disk.

## **Type 1 font preferences:**

The Type 1 font preferences option provides control over some aspects of the Type 1 conversion process.

### **Apply hints**

You should leave the "Apply hints" option checked most of the time. Exceptions would be in cases where you have a really weird font like "Zapf Dingbats" that would not be improved by having hints. When in doubt, you should leave hints on.



## TrueType preferences:

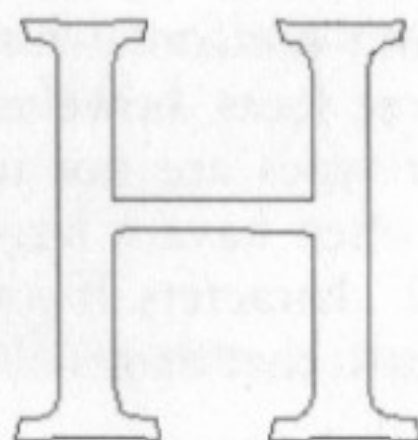
The "TrueType preferences" option provides control over some aspects of the TrueType conversion process. You can select the type of hints that will be used to instruct the character, select whether or not bitmaps associated with the input font are copied to the TrueType font, and select the amount of dropout control that is to be used when the characters are imaged. Each of these preferences is explained in the following paragraphs.

### Apply vertical and horizontal hints

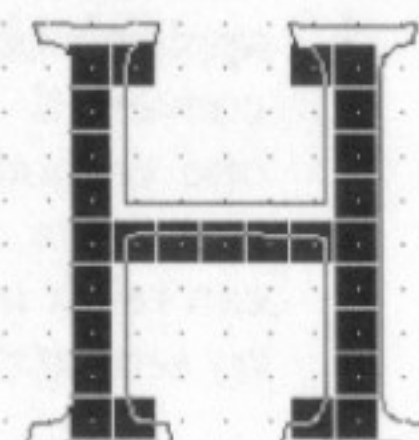
When a character, or "glyph," is to be displayed on a screen or printed, its outlines are scaled to the size required by the resolution of the target device which is measured in dots per inch (dpi). If this scaled outline were to be displayed or printed without modification, the result might not be very pleasing. This is because the scaling of the outline by itself does not take into account where the individual dots or pixels will be drawn. Because of this, a vertical stem of a character, for example, might fall between pixel boundaries and not show up at all on the screen. To prevent problems like that, each glyph can have a set of instructions which are used to fit the character to the grid of pixels for a particular device. These sets of instructions are known as hints. After the hints have been applied to a glyph, its outline is actually distorted, but in such a way as to conform to the underlying grid so that the important features of the character will be drawn correctly. The following diagrams illustrate how hints improve the appearance of TrueType characters.

**Note:** Don't be afraid to play with the different TrueType hinting options. Rather than give you a "you want hints, you got hints" approach, Meta Pro provides you some control over how the hints are applied. If you have created a TrueType font, and you don't think it is as it ought to be, try using the drop-out control (see page 63), or turn diagonal hints off. With a little experimentation, you can sometimes wind up with a substantially better TrueType font.

☐ **Apply hints**

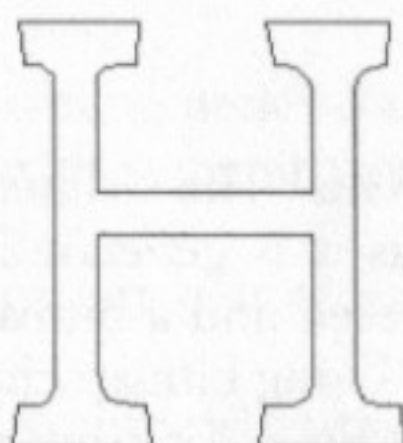


Unhinted outline

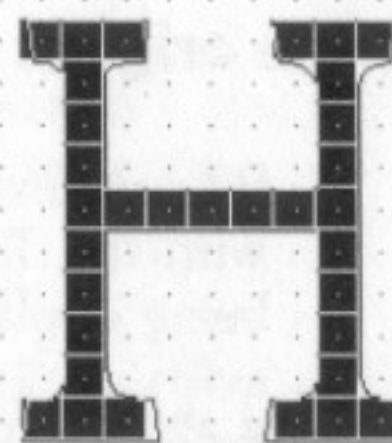


Bitmap from unhinted outline

☒ **Apply hints**



Hinted outline



Bitmap from hinted outline

The TrueType instructions for each character are based on identifiable character features. Stems and serifs are the two most common character parts which benefit from vertical and horizontal instructions.



## **Apply diagonal hints**

Characters such as "A" and "V" have diagonal stems which are important character features. Normally the best results can be obtained by applying both vertical and horizontal hints as the TrueType font is converted. There are some fonts, however, which may look better if one or both of the hint types are not used. Japanese and Chinese characters, for example, often have a large number of contours. This can result in "over-hinted" characters. If your font doesn't convert well, try setting the preferences so that diagonal hints are not applied.

You may want to generate a TrueType font composed of unhinted outlines. This is accomplished by setting the preferences so that neither vertical, horizontal, nor diagonal hints are applied. In most situations, you will need to add instructions to the font using some other method. Otherwise the results on the screen and the printer are not likely to be satisfactory.

## **Include original bitmaps**

Bitmaps exist for many fonts. The default setting is to include these with the TrueType font as it is generated. When a TrueType font is being displayed on the screen and a bitmap for the current point size exists, the bitmap is used. Using bitmap characters for screen display is faster since the character does not have to be scaled and converted from an outline. The results are usually superior because the bitmaps are hand-edited for each point size. There are times, however, when the TrueType outlines provide a more regular transition from one point size to another. If you do not want to include bitmaps with the TrueType font, turn off that option in the preferences dialog.

## **Separate font families**

If you select this option, Meta Pro will split up your font families. If you leave it unchecked (which is the default), Meta Pro will preserve your families. This means that when you convert all four Times styles to TrueType, for example, Meta Pro will create one file which will have all

four TrueType fonts stuffed into it (and still logically connected as they were before). This is the option that most people will choose.

Altsys' Style Merger allows you to merge separated fonts back into one family. You can read more about Style Merger on page 76.

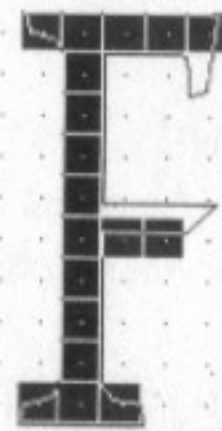
## Dropout prevention

A "dropout" occurs when both sides of a character's line or curve fall between pixel boundaries. A dropout is said to have happened when an important feature of a character fails to appear at all. Meta Pro provides three levels of dropout control. If you select "None," the TrueType Fontscaler will not attempt to find and correct dropouts. "Standard" dropout control will eliminate nearly all dropouts. "More" will eliminate all dropouts but will sometimes turn on bits which weren't wanted.

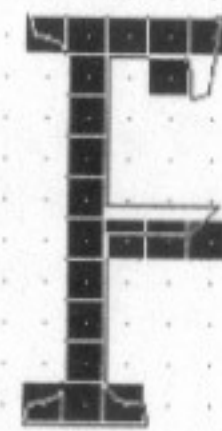
The following illustrations show the results obtained using the three levels of dropout prevention. The first "F" character is missing its cross bar because it happens to fall between two pixel boundaries. With "Standard" dropout prevention, the feature is restored.



No dropout control



Standard dropout control



More dropout control

Notice that the outline at the right side of the top bar descends below the bar. This type of structure is called a "stub." The character would conform to the intended outline better if a pixel were turned on in this area. Standard dropout prevention will not find stubs. The third character was drawn with "More" dropout prevention. It obviously has too many pixels turned on. Due to a quirk in the TrueType Fontscaler, the pixel that is turned on is to the left of the end of the bar. It is likely that future revisions of the Fontscaler will not exhibit this behavior.



## **Character mapping**

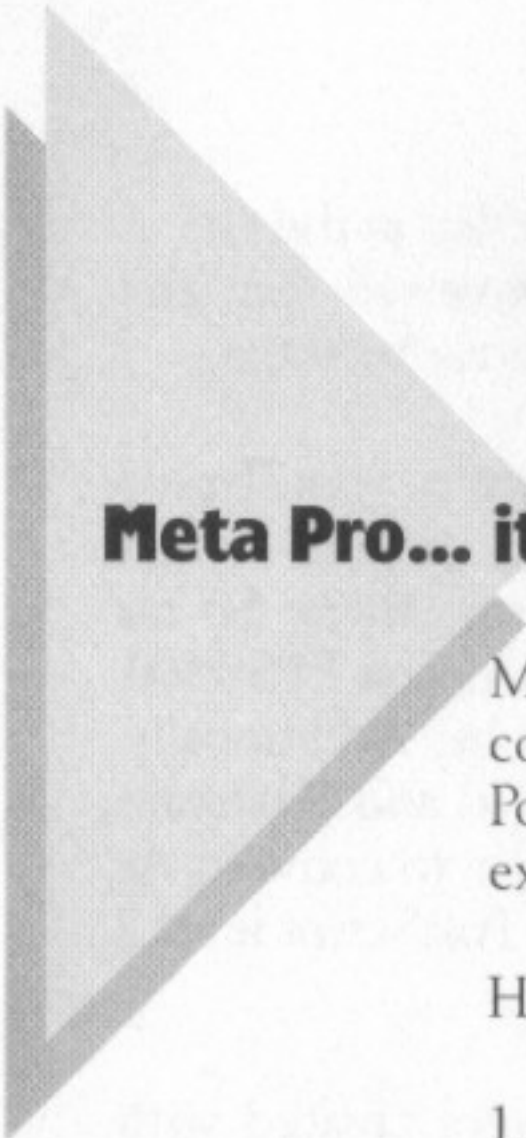
### **Standard character ordering**

Most of the time, you will never change the default, which is "Standard character ordering." Choosing this option gives you a normal font with all the characters you would expect, in the places defined by Apple for a standard TrueType font.

### **Sequential character ordering**

"Sequential character ordering," on the other hand, means that in the generated TrueType, characters are stored in the same order as they were defined in the original font. This is useful for foreign character sets, and other non-standard fonts. Because of the marginal use of this setting, you will not encounter it very often.

# Appendix A



## Meta Pro... it's magic!

Metamorphosis Professional is a unique utility that has the ability to communicate with an attached PostScript printer that has an Adobe PostScript interpreter. It executes special commands that allow it to extract and send a font's true outlines back to your Macintosh.

How does Meta Pro do this?

1. First it looks for the PostScript font in the folder where your bitmap fonts are stored.
2. If Meta Pro doesn't find the outlines there, it then looks into the folder that contains the Metamorphosis Professional application.
3. The next place Meta Pro looks for the fonts is in your own System folder. If you have installed your bitmap font using Font/DA Mover, Suitcase, or Master Juggler, and have placed the associated PostScript file into your System folder, Meta Pro will find it.

Or you can have your fonts installed another way: in their own folder. We recommend that your bitmap fonts and your outline fonts be stored in the same folder.

If, after the first three steps, Meta Pro has found the required information, it sees if it can read the file directly from the disk. If it cannot understand the font file, it downloads it to the printer.

4. If Meta Pro fails to find the font file in any of the first three places, it then looks into your attached printer's RAM or ROM for the PostScript information. If Meta Pro doesn't find it there, it proceeds to look in your printer's hard disk (if there is one attached). If Meta Pro fails to find the PostScript information in any of the above mentioned places, you will not be able to convert the font.



If there are any fonts left in the "Fonts to Convert" list at the end of the conversion process, they have not been converted. You can double-click on each font to read the associated error message.

**Note:** If you don't have an Adobe PostScript printer, your Type 3 fonts often won't convert. A few Adobe PostScript printers do not support Meta Pro's reading character outlines from them. So far they are the QMS PS-410, any Emerald RIPs, the Epson EPS-7500, and many other non-680x0-based RIPs from Adobe. Additionally, fonts created in early versions of Fontographer (1.x) and Bitstream Type 3 fonts must have a printer attached in order to convert. As far as we know, Meta Pro can read fonts from all PostScript level 2 printers.

We're sorry but we cannot convert fonts that were created with The Art Importer. Art Importer fonts stretch the font format farther than Meta Pro can go.

**Important:** Please remember that Metamorphosis Professional was designed to allow you to manipulate and edit your own fonts for your personal use only. Using Meta Pro to convert fonts for commercial use is not only unethical but illegal. If you are considering altering another company's font for commercial use, Altsys recommends that you have their permission.

# Appendix B

## TIPS

### Batch conversion

When using MultiFinder, you can run Meta Pro in the background. We have found it extremely easy to generate a group of fonts while working on other tasks. The progress dialog will always keep you informed while Meta Pro continues its conversion in the background, and will beep when it is done.

If you are not using MultiFinder or System 7, it would be helpful and save time if you select a batch of fonts for group conversion. Then you can start the conversion process before you go to lunch or even before you leave your office for the evening. In this way, the fonts will be converted when you return (depending on how quickly you can eat or how much *or how little* sleep you require!).

### TrueType hinting and non-Roman fonts

The TrueType hinting options that are included in the Preferences dialog should be turned off if you are converting non-Roman fonts (i.e., Zapf Dingbats). Applying hinting options to these fonts can make them look extremely weird.

### Converting PC Fonts

Metamorphosis Professional can't read PC fonts directly, so it needs to use the printer. In addition, Meta Pro can't use an outline file without having a bitmap file. So, in order for Meta Pro to extract a PC font from the printer, you must first create a "dummy" bitmap font file, using Fontographer. Go to Fontographer's file menu and choose "New font..." Accept all the default settings and click "OK." Now "Save" the font into the Fontographer folder with a name that is exactly the same



as the embedded name in the font file to be extracted (i.e., the font name on the status printout). Next, choose "Generate fonts..." from the File menu and choose "None" for the Outline format (we don't need a PostScript file) and "Macintosh NFNT" for the bitmap format. Click "OK" in the "Generate fonts..." dialog and Fontographer will generate a file named "YourFontName.bmapfile" in the Fontographer folder. Now "Quit" Fontographer.

Next run Meta Pro. Use the "Open font file..." command to open the bitmap font you just generated, and press the convert button. If you named the font correctly, and if the font is in the printer, Meta Pro will read it directly from the printer.

## **PostScript fonts may override your TrueType fonts**

Given a choice of outlines to print with, the Macintosh will always choose PostScript over TrueType. For example, suppose you convert Times from PostScript Type 1 to TrueType. You install your TrueType font and try to print to a PostScript printer. Your document prints OK, but the printer really used the PostScript Times font which is embedded in your printer, rather than the TrueType version. The same thing goes for the PostScript fonts which are on your hard disk. You should rename your original PostScript font files if you want to be sure that the final printout is actually TrueType.

## **Symbol characters**

We apologize for the "techeze" in this tip, but here goes: Meta Pro pulls in Symbol characters for typefaces encoded with the Macintosh encoding vector. At the start of the conversion process, you may notice that sometimes Meta Pro will begin by reading in the Symbol font. This is because you have chosen some fonts which need Symbol characters.

## **Fontographer database with attached library**

Do not attempt to convert a Fontographer database which has an attached library. Use Fontographer to generate a PostScript font and then convert that font instead of the database file.



## Terminology

### Bitmap fonts

The Macintosh uses *bitmap* fonts for screen display and printing to bitmap printers. Bitmap fonts are selected from any application which understands fonts. These fonts are stored in the System file or in suitcase files, where they are accessible to all programs. Bitmap fonts cannot be smoothly scaled, so each font requires several bitmap fonts in different sizes for display purposes.

The bitmap fonts used for screen display are automatically tied to the PostScript fonts by the font name and size. For example, when a document which uses a bitmap font called Garamond-12 is printed to a PostScript printer, the print software looks for a PostScript font named Garamond. The font size is passed on to the PostScript font as a scaling factor.

### Caching

Translating an outline character into a bitmap is a complex process which takes an amount of time proportional to the complexity of the character. To minimize the amount of time spent generating bitmaps from outlines, the bitmaps are saved for later use. This saving process is known as *caching*. The first time a particular letter is printed, its bitmap must be generated and cached before it can be drawn on the page. Once a letter has been converted, its bitmap is normally found in the cache, and is used directly.



## **Downloading**

*Downloading* is the means by which the font outlines are sent to the printer from the Macintosh. This normally occurs over an AppleTalk network.

LaserWriters contain powerful computers which allow them to accept a variety of fonts and graphics commands that are expressed in PostScript or TrueType. In particular, the LaserWriter can accept new typefaces through the process of downloading.

The LaserWriter has two important types of built-in memory. The first is ROM (Read-Only Memory) which is unchangeable. ROM holds its information indefinitely, even when the power is turned off. The basic printer control program and several typefaces are programmed into the ROM and thus are not changeable. The second type of built-in memory is RAM (Random-Access Memory), which can be changed. However, RAM loses its contents each time the power is turned off. Downloaded fonts are put into RAM or onto a hard disk attached to the printer.

## **EPS**

*EPS* (sometimes known as EPSF) is the Encapsulated PostScript file format originally developed by Altsys Corporation. EPS files may also contain a PICT (bitmap) representation along with the PostScript description of a picture.

## **FOND**

A *FOND* is a Macintosh file resource that contains (among other things) the information that creates the link from the bitmap font to the PostScript font. The Macintosh print manager examines the FOND to find the name of the corresponding PostScript file. If there is a PostScript font file available in the System Folder, it is downloaded to the printer

before printing begins. If no PostScript font file is found, and there are no TrueType outlines available, or if the FOND does not exist, the bitmap font is used. The PostScript font file must be in the System Folder or in the same folder as the printing application in order to be found for downloading (unless you are using Suitcase II or Master Juggler).

## Font

A **font** (which is derived from "found" as in typefoundry) of type traditionally is a complete set (or alphabet) of type in one size and style (for example, 12-point TimesBold). A **typeface** (or face) is a complete set of characters and styles which share a similar appearance.

With computers, the term "font" has come to represent a family of type which includes all the sizes and styles. Additionally, the distinction between fonts and faces is not always clear-cut. For example, the Times-Roman face comes in several sizes of screen fonts but inside the LaserWriter there is only one master face which is automatically scaled to the desired point size during printing. Since the distinction between face and font is not clear, we feel justified in using the term "font" to describe both a particular size of a face, and the underlying face itself.

## Hints

Hints are special instructions that font outlines use to make themselves look good at small sizes (i.e., 12 points) on low-resolution devices like the LaserWriter and your monitor's screen (72 dpi). On high-resolution devices (1200 dpi and higher) like the Linotronic, hinting doesn't make any difference unless you're printing extremely small text (i.e., 2 points).



## **PICT**

**PICT** (taken from **picture**) is Apple's standard file format for bitmapped and object-oriented graphics and is supported by most Macintosh graphics applications. Using PICTs allows you to save graphic information as a series of objects, like squares, circles, and freeform paths. When a PICT file is reopened, all of that information is read back in, and all of your graphics appear just as they did when you last edited them. Meta Pro uses the PICT as a way to store character outlines as freeform paths (that's "Smooth Polygons" in PICT terms), so programs which understand PICTs can get at them.

## **PostScript**

**PostScript** is a programming language which was developed by Adobe Systems, Inc. to drive high-resolution printers. Invented as a standard page description language with a well-documented behavior, it is used on a number of different manufacturers' printers and typesetters.

PostScript's generality allows any picture to be described as a program; this is how fonts are constructed. Each letter is described by a small program which draws the letter outline using geometric primitives. In order to print the character on a page, this character drawing program is run by the printer control software to draw and fill the outline, generating a high-resolution bitmap. The bitmap is generated at the current point size, and then placed on the page at the appropriate location.

## **Type 1**

*Type 1 fonts* are a special kind of PostScript font, and may contain hints. There are some advantages in using Type 1 fonts over Type 3 fonts.

- Type 1 fonts are filled using a better technique, so they look more like their actual outlines than Type 3's do.
- Type 1 fonts are more compact, since part of the font is built into the printer.
- Type 1 fonts are compatible with Adobe Type Manager, so that all sizes can be rendered on screen smoothly.
- Type 1 fonts print faster.

There are also a few disadvantages in using Type 1 fonts.

- Type 1 fonts cannot contain external composite characters.
- Type 1 fonts cannot contain grayscale filled characters.
- Type 1 fonts cannot contain stroked characters (characters with no fill).
- Type 1 fonts cannot work on some PostScript clone printers.

## **Type 3**

*Type 3 fonts*, sometimes referred to as user-defined fonts, are the most flexible and general type of PostScript font. Type 3 fonts have some advantages over Type 1 fonts.

- Type 3 fonts can contain complex composite characters.
- Type 3 fonts can contain grayscale fills.



- Type 3 fonts can contain stroked characters.
- Type 3 fonts work on PostScript clone printers that don't use Type 1 fonts.

## TrueType

TrueType is the new outline font format developed by Apple Computer to be used with their System 7 operating software. TrueType can allow for fonts with more than 256 characters, so large character sets (i.e., Kanji, Gaigi, etc.) will be supported. Some advantages in using TrueType are:

- TrueType has the potential to look better than Type 1 (especially at sizes of 12 points and below) because it has a more capable hinting scheme.
- You don't need to use ATM to get a nice screen display of your fonts since System 7 images TrueType fonts on the screen automatically.
- TrueType fonts are simpler to use than PostScript fonts since the bitmaps and outlines are in the same file.

TrueType is an outline font format and character imaging system that allows a single definition of a font, in the form of outlines, to be used at various sizes and on different devices with different resolutions. A TrueType font can be used for screen display and for output to a wide array of printers. The same font can even be used on multiple computer platforms.

Each character in a TrueType font is defined by its outlines and other information such as its height and width. A single character definition is known as a "glyph."

## How TrueType works

Each TrueType glyph consists of one or more paths which are always closed. That is, the last point, although it is not explicitly stored in the glyph, is the same as the first point in the path. Each path is made up of straight lines and curved segments. The curved segments are quadratic B-splines. A B-spline is defined by two points, known as on-curve points, which define the end points of the curve segment and a single off-curve point which determines the curvature of the segment. A path may have a number of these curved segments joined together to form a continuous, smooth curve. In this case, only the off-curve points plus the beginning and ending on-curve points are stored as part of the glyph. The missing on-curve points can be calculated as they are needed.

A character can also be defined by a component glyph. A component glyph does not have any outline points of its own. Rather, it defines the character by using the outlines from one or more other glyphs, or components. Accented characters are often defined as component glyphs.

When a character is to be displayed on a screen or printed, the glyphs' outlines are scaled to the size required by the resolution of the target device measured in dots per inch (dpi). If this scaled outline were to be displayed or printed without modification, the result might not be very pleasing. This is because the scaling of the outline does not take into account where the individual dots or pixels will be drawn. Therefore, a vertical stem of the character, for example, might fall between pixel boundaries and not show up at all on the screen. This is where hints become important. Each glyph can have a set of instructions, known as hints, which are used to fit the character to the grid of pixels for a particular device. After the hints have been applied to a glyph, its outline is actually distorted, but in such a way as to conform to the underlying grid so that the important features of the character will be drawn correctly. This is how one set of outlines can be used on different computers and on different types of printers.



# Appendix D

## Style Merger

We have included our new utility, Style Merger™, on the Metamorphosis Professional disk.

Style Merger takes styled fonts and merges them into one font family. Style Merger will work with both PostScript and TrueType fonts. It never affects any fonts or font files on your computer; it simply reads existing fonts and creates new files.

Style Merger allows you to quickly and easily build a family containing Plain, Bold, Italic, and BoldItalic fonts. So if you use Meta Pro to convert four style fonts of the same typeface, Style Merger can merge the four separate fonts into one family, thus saving space in your font menu.

Style Merger is so easy to use that the complete instructions are included on these three pages.

### To start Style Merger:

- Double-click on its icon.



Style Merger 1.1

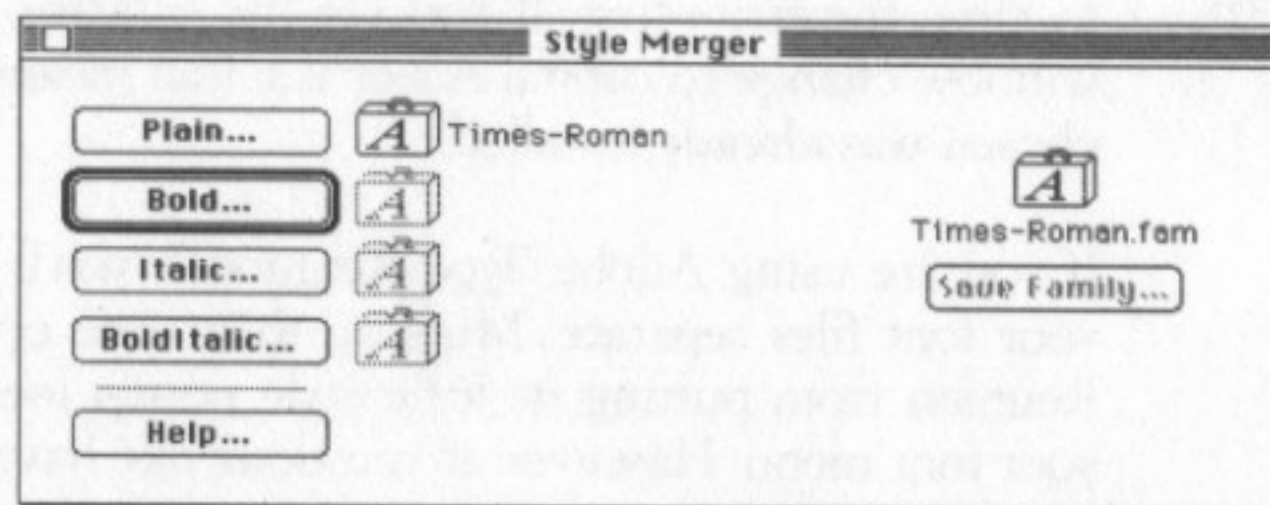
- Choose the Plain font for your new family.
- Then choose which fonts should be the Bold, Italic, and BoldItalic faces.
- Save the new family.

That's all there is to it.

Style Merger's main window is mostly a collection of buttons. On the left side of the window are the style buttons: Plain... Bold... Italic... and BoldItalic...

When you start Style Merger, the only button you can initially press (other than "Help," which is always available) is "Plain..." which begins the process of creating the family. In addition, "Plain..." has a bold outline around it, indicating that this is the button you should press first. The button that you should press next always has a bold outline around it, to guide you through the family building process (hitting the carriage return always has the effect of clicking on the currently bolded button). Buttons which you are not supposed to press at a particular time are dimmed so that you can't press them and get into trouble. In case you do make a mistake, clicking "Plain..." always removes any previously selected fonts and allows you to start over.

After you press "Plain...", a file selection dialog appears, allowing you to choose your fonts. Say you choose Times-Roman, because that is the Plain style of Times. Once you have made your selection, you will see the name of your Plain font appear to the right of the "Plain..." button. There is also a font file image there which changes from gray to black, indicating that a Plain font has been selected. In addition, the default new family name will appear just above the "Save Family..." button on the right. This name can be changed when you press the "Save Family..." button.



Once you choose your Plain selection, Style Merger puts a bold outline around the "Bold..." button indicating that this would be a good button to press next. You can choose the Bold, Italic, and BoldItalic styles in any order you want, so you could choose "Italic..." next if you like. To continue with our example, you should just click on the "Bold..."



button and do them in order. Once you have selected the "Bold..." button (or whichever button you choose second), the "Save Family..." button becomes active since "technically" you have enough fonts to create a family. *You don't have to have all four styles to merge into a family.*

When you press the "Save Family..." button, a dialog box appears asking you where you want to save the family and what you would like to name it. In our example, Style Merger would suggest a name like "Times-Roman.fam." This will be the name of the file it creates unless you name it something different. When you install the new family, you will see Times-Roman in your font menu. *If you just want to see "Times" in the font menu, you should tell Style Merger to save the family as "Times.fam."* After you press "OK" in the dialog box, Style Merger takes a moment or two to actually build the family, saves it on the disk, cleans out all the font selections, and is ready to build another family.

## **Things you should know**

Font families must be built using fonts that are meant to go together (i.e., their names must have the same base part). So, you cannot choose Helvetica-Bold as the bold style in the Times family; you have to choose a font whose name begins with Times.

Make sure the fonts you use to build families are not installed. Always use SuitCase™, Master Juggler™, or whatever you installed them with to close the fonts first. If you see the suitcase icons in Style Merger's window change to capital A's or B's, that means that the font you have chosen was already installed.

If you are using Adobe Type Reunion™, you'll probably want to keep your font files separate. Merging them into one family prevents Type Reunion from putting its little style popup menu next to that font in your font menu. However, if you don't like having fonts spread all over your font menu (grouped together under B's, and I's, and BI's), Style Merger is the answer. Style Merger can, for example, take Times, B Times Bold, I Times Italic, and BI Times BoldItalic, and build them all into Times. Now, instead of changing fonts from Times to B Times Bold, simply change the style to Bold.

# Appendix E

## Things you should know about PICT

Here is some additional information that you might like to know about PICT. If you are not interested in conversion to PICTs, you may skip this section.

### When you may need more memory

PICT to Clipboard and PICT file conversion need a lot of memory. If you convert a "normal" amount of text (thirty or forty letters), you should never have to give Meta Pro more memory. However, if you convert all the characters in the font at once, you may need more memory, but even that depends upon the font.

### Reshaping PICT paths

We create PICT paths which have some extra points to give better outlines. Depending on what you want to do with the PICTs, this may or may not be a problem. Having lots of points in a path makes it somewhat more difficult to edit. If you are not planning on editing (i.e., reshaping) the actual character paths in your drawing program, don't worry about it. But if you are, here are some strategies to help minimize the number of points:

- If your PICT was from a Type 1 font, try converting it to TrueType first, then recreate your PICT from the TrueType font.
- If the only reason you would edit a character form is to make it look better (because the conversion process didn't do such a hot job on it), try generating the character at 300-500 points, then scale it down in your drawing program. This almost always results in an excellent conversion to PICT, and you won't have to edit it at all.



- If all else fails, you can delete points of paths in MacDraw II and MacDraw Pro. Select a character path, choose "Reshape" from the Edit menu, then Option-click on the points you want to remove. If the path changes slightly after you remove a point, grab an adjacent point and adjust it until the path assumes its previous shape.
- If you are going to Aldus FreeHand or Adobe Illustrator, don't use PICT. Use EPS, which is a vastly superior graphics format.



## The Altsys Product Line

### Fontographer

Fontographer is a specialized graphics editor designed to simplify the creation of high-quality PostScript typefaces, character sets, and logos on the Macintosh. The fonts you create are ATM-compatible and can be used on Macintosh, PC, and NeXT computers. With Fontographer you can modify an existing character set, trace a scanned image, or draw from scratch. You can create your own fonts, logos, or custom art, and have them all available at the touch of a key.

Whether you are a novice or an experienced graphic designer, Fontographer provides the means to assign your typographic images to any key or combination of keys, and the added ability to instantly repeat and resize these images in any application.

Using Fontographer's drawing tools, you can create a professional-quality PostScript character in minutes and print that character on a LaserWriter or any PostScript compatible printer.

### EPS Exchange

EPS Exchange is the first software utility for the Apple Macintosh which allows Aldus FreeHand 3.0 drawings to be easily and accurately exported for use in Adobe Illustrator 88 and Adobe Illustrator 3.0.

The first in the Altsys XTRAS line of software, EPS Exchange provides a powerful design and productivity tool for art directors, freelancers, service bureaus, ad agencies, and other creative types who create illustrations with PostScript language drawing programs.



EPS Exchange is simple to use: choose "Save as..." or "Export" from the Aldus FreeHand File menu and then select either the Adobe Illustrator 3.0 or Adobe Illustrator 88 format. EPS Exchange automatically converts the Aldus FreeHand 3.0 document to an Adobe Illustrator document.

With EPS Exchange, you can immediately begin to increase your flexibility in creating PostScript illustrations, as well as your ability to collaborate with your colleagues.

## **Fontastic Plus**

Fontastic Plus is Altsys' specialized bitmap font editor designed to create new bitmap fonts and typefaces and customize existing bitmap character sets with distinctive characters, logos, and graphics.

Using MacPaint-like tools, you can easily create bitmap logos, foreign characters, clip art, and custom fonts. Images can be cut and pasted into a font from other applications (i.e., MacPaint). You can apply special effects like scaling (up to 127 points), as well as rotating, styling, and editing to provide a quick and easy way to design attractive fonts and graphics.

An integrated font mover makes installing your fonts as simple as "Cut" and "Paste."

Fontastic Plus includes standard Altsys features such as kerning pairs, fractional character widths, and multiple undo's and allows for high-quality printing on QuickDraw printers.

## *Aldus FreeHand*

Aldus FreeHand, designed and written by Altsys Corporation, is a powerful, precise, and easy-to-use PostScript illustration and design tool for the Apple Macintosh. Like all Altsys products, Aldus FreeHand can meet the demands of commercial artists and designers, yet is simple enough for the average user. Aldus FreeHand is published by Aldus Corporation. Contact Aldus at (206) 622-5500 for more information.

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Altsys Corporation  
(214) 680-2060  
Fax (214) 680-0537  
269 W. Renner Parkway  
Richardson, Texas 75080

320MAN-0394