

TechNotes

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Using PPD and Custom Printer Files

If you print to a PostScript device from Aldus PageMaker, Aldus FreeHand, or Aldus PrePrint and want to make sure you're getting the most from your PostScript device—the fastest possible output and access to all its unique features—read on! The articles in this issue of *Aldus TechNotes* will explain what PPD and custom printer files are and how properly using them can improve and speed PostScript output.

Printer description files and the Big Picture

When you print to any device from any application, that application has to know certain things about the printer you're using. Most important, the application or printer driver supplying the printing code has to know what language (PostScript or QuickDraw, for example) the printer understands. The language your printer uses determines what kind of printer driver you must use. For instance, if you print to a PostScript device, you must use a PostScript driver.

Beyond the printer's language, there are several model-specific details an application or printer driver needs to know about a printer—what built-in fonts it contains, what paper sizes and trays it has, and so forth.

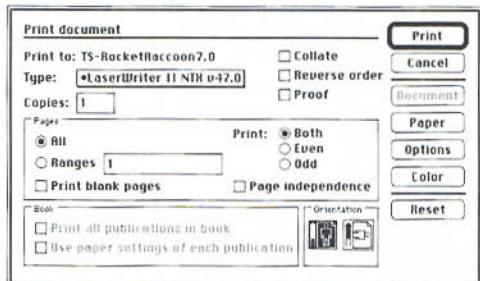
There's a variety of ways in which Aldus applications obtain this sort of model-specific information about printers—what method they employ depends largely on the general type of printer you're using. For instance, when you use PageMaker, Aldus FreeHand, or another Aldus application to print to a non-PostScript device, they obtain the model-specific information about that printer directly from its printer driver.

Aldus applications use a variety of methods for obtaining model-specific information about PostScript devices. In general, the most recently developed Aldus applications use PPD files for this purpose. Here's an overview of how several Aldus applications obtain model-specific information about PostScript devices:

- PageMaker 4.0
PageMaker 4.0 obtains model-specific information about PostScript devices from APD (Aldus printer description) files, a predecessor of PPD files.
- PageMaker 4.2, 4.2a, and 5.0; Aldus FreeHand 3.x and 4.0; and PrePrint 1.5x and 1.6
These Aldus programs use PPD files to obtain model-specific information about PostScript devices. Adobe Systems, author of the PostScript language, developed the PPD file format specification so PPD files would provide the most complete information possible on PostScript device features. Using PPD files to obtain model-specific information about PostScript devices helps PageMaker, Aldus FreeHand, and PrePrint offer sophisticated printing features such as color separations.
- PageMaker 4.2 and 4.2a and Aldus FreeHand 3.x use Adobe version 3.0 PPD files (PageMaker 4.2a can also accept Adobe version 4.x PPD files). Aldus FreeHand 4.0 and PageMaker 5.0 use Adobe version 4.x PPD files.

A closer look at PPD files

PPD files are text-only files that describe the model-specific characteristics of PostScript devices. You select them from the "Type" popup menu in PageMaker 5.0's "Print document" dialog box and the "Printer type" menu in Aldus FreeHand's "Print options" dialog box. In PrePrint, you select PPD files from the "Printer type" menu in the "Print options" dialog box (PrePrint 1.5.1) or the "PrePrint options" dialog box (PrePrint 1.6).



The PageMaker 5.0 "Print document" dialog box

Select the right PPD or custom printer file for your PostScript device from the "Type" drop-down menu.

Although you can open a PPD file in any text editor, you should never edit a PPD file. Doing so would violate Adobe's copyright and could make it difficult or impossible for a technical support representative to help you if you encounter a printing problem afterward. If you want to override the information contained in a PPD file, you can create and use an auxiliary printer description file (a custom printer file or a PDX file) in conjunction with that PPD file. What kind of auxiliary printer description file you need will depend on the application you're using. For more information, see "Which Programs Use Which Printer Files" on page 4.

Understanding different version PPD files

Adobe Systems Inc., author of the PostScript language, developed and maintains the PPD file format specifications, which it updates periodically. Adobe released the version 3.0 PPD file format specification in 1990, the version 4.0 specification in 1992, and the version 4.1 specification in April 1993. Most applications developed since 1992 can use either version 3.0 or version 4.x PPD files, but work best with 4.x PPD files.

Select the right PPD file when you print to a PostScript device

Selecting the right PPD file when you print to a PostScript device from PageMaker, Aldus FreeHand, or PrePrint will allow those applications to properly use all the model-specific features of your PostScript device, helping ensure your job prints quickly and properly. Here is a partial list of the model-specific features described in a PPD file and why applications need that information. PPD files describe:

- How much free virtual memory your PostScript device has
The free virtual memory setting reflects how much RAM (random access memory) your PostScript device has available for producing the rasterized page description of your files. PageMaker and Aldus FreeHand use this number to determine the most efficient way to download resources such as fonts.

Here's an example of how PageMaker and Aldus FreeHand use the free virtual memory setting: If your PPD file says your printer doesn't have enough RAM to hold all the fonts for your document simultaneously, PageMaker or Aldus FreeHand might have to download each font on an as-needed basis—so the printer can use it to image a certain amount of text—then instruct the printer to flush the font from its memory to make more RAM available for other tasks. Later, if that font is required again, PageMaker or Aldus FreeHand would need to download it another time.

If your printer has more RAM available than your PPD file reports, PageMaker or Aldus FreeHand might be downloading and flushing fonts from your PostScript printer too often, increasing your print times. On the other hand, if your PPD file says your printer has more RAM than it does, you may experience PostScript errors.

- What fonts are built in to your PostScript device
PageMaker and Aldus FreeHand use the PPD's list of built-in fonts to determine which fonts it must download. Using the right PPD with the right font list will ensure PageMaker and Aldus FreeHand can download the right fonts for the fastest possible output without font substitution.
- Paper options available from your PostScript device
PPD files include information on what paper sizes and trays your PostScript device supports and whether or not your PostScript device supports custom paper sizes. If

you select the wrong PPD file—one that contains paper-handling specifications your PostScript device doesn't understand—you may not be able to use your PostScript device's paper options correctly or you may experience PostScript errors.

- Color and resolution options offered by your PostScript device
- PPD files include information on whether your PostScript device can print in color, what resolutions your PostScript device supports, and optimized screen angles and frequencies for producing process color separations.

Where to obtain PPD files

Aldus Corporation does not write PPD files—PostScript device manufacturers do. Nevertheless, as a service to our customers, we often help distribute PPD files we've tested with our products. For instance, PageMaker, Aldus FreeHand, and PrePrint ship with dozens of PPD files.

A Short Glossary of PPD-Related Terms

Use the following list to help you keep track of PPD-related terms. See the articles in this issue for an overview of how these components work together.

APD (Aldus printer description) files

APD files are used by Macintosh PageMaker 4.0, Aldus FreeHand 2.x, and some non-Aldus programs. They are text-only files that describe the device-specific features of PostScript printers. Adobe first released the APD (Adobe printer description) file format in 1987. When Adobe released the PPD (PostScript printer description) format to replace the APD format, Aldus adopted APD. Since then, APD files have been known as Aldus printer description files.

Auxiliary printer description file

Although this isn't an official term that describes a particular file format, we've used it throughout this issue to refer to different kinds of files (PDX and custom printer files) that override or append information in the PPD file with which they're used. For more information, see the entries for PDX files and custom printer files.

Custom printer file

A custom printer file is a text-only file you can create and edit to override or append information in the PPD file with which the custom printer file is used. Custom printer files conform to the Adobe Systems, Inc. file format outlined in the PPD version 4.0 or 4.1 specifications.

Include file

Another name for a custom printer file. See "Custom printer file" for more information.

Local customization file

Another name for a custom printer file. See "Custom printer file" for more information.

PDX (Printer description extension) file

A text-only file that follows the Aldus PDX file format to append or override information contained in a version 3.0 PPD file. Aldus PageMaker 4.x for the Macintosh, Aldus FreeHand 3.x for the Macintosh and Windows, and Aldus PrePrint 1.5x use PDX files.

Printer driver

A printer driver is a system utility that handles several aspects of printing. Typically, it takes your document and translates it into a language your printer will understand, then sends your print job from your Macintosh to your printer. You select printer drivers in the Chooser. When you print from PageMaker 5.0 to a PostScript device, you must use either the Apple LaserWriter 8.x or Adobe PSPrinter 8.x driver.

PageMaker 5.0 performs some of the functions of a printer driver when you print to a PostScript device: it handles most of the PostScript print code generation. The Apple LaserWriter 8.x and Adobe PSPrinter 8.x driver's primary function is to pass the PostScript code on to your PostScript device.

Note: APD, PDX, PPD, and custom printer files are not printer drivers. These files assist the printer driver by describing the features of your PostScript device.

PPD (PostScript printer description) file

A PPD (PostScript printer description) file is a text-only file that describes the unique features of a PostScript device. The PPD file format specifications are maintained by Adobe Systems Inc.

PPD including file

Another name for a custom printer file. See "Custom printer file" for more information. ■

If you use an Aldus product that works with PPD files, and it did not ship with the PPD file you need, you may be able to obtain a PPD file for your PostScript device from the following sources:

- Any Aldus Authorized Imaging Center

For a current list of Aldus Authorized Imaging Centers, fax yourself FaxYI document #499906, "Aldus Authorized Imaging Centers."

If you plan to create a PostScript file for output on an imagesetter or other PostScript device owned by an imaging center, contact them for a PPD file and custom printer file you can use for that device.

- The Aldus forum on CompuServe

Aldus maintains a library of all Adobe-licensed and non-Adobe-licensed PPD files that Aldus has tested with Aldus products that use PPD files. To gain access to the Aldus CompuServe forum, use the CompuServe quick reference word ALDUSFORUM.

- Your PostScript device's manufacturer

PPD files are written and distributed by PostScript device manufacturers. If your PostScript device has not been on the market very long, its manufacturer may be the only source for a PPD file.

- The Adobe CompuServe forum

Adobe maintains a large library of PPD files for all Adobe-licensed PostScript devices. This library is available on CompuServe—use the quick reference word ADOBE to gain access to Adobe's forum. If you do not find a PPD file for your printer there, Adobe may not have had a chance to verify it yet or your printer may be a non-Adobe-licensed, PostScript-compatible device. LaserMaster and Pacific Data PostScript devices are examples of non-Adobe-licensed, PostScript-compatible devices.

If you cannot obtain a PPD file for your PostScript device, you may be able to print relatively simple jobs by using the "General" PPD file or a PPD file for a printer that has very similar features to your PostScript device—for instance, the same amount of RAM, the same resident fonts, and the same kind of paper-handling features. However, if you're printing to any high-resolution PostScript device or printing color separations, we recommend that you use a PPD file specifically written for that PostScript device.

Working with auxiliary printer description files (custom printer and PDX files)

PPD files reflect the model-specific characteristics of your PostScript device—what features and options it had when it left the factory. If you modify your PostScript device in some way—by adding fonts, memory, or other features—your PPD file will no longer describe your PostScript device accurately. To take full advantage of the changes you've made to your PostScript device, you'll need to create an auxiliary printer description file that overrides or appends the information in your PPD file.

There are two kinds of auxiliary printer files with which you should be familiar: custom printer files and PDX (PostScript description extension) files.

Understanding custom printer files

Custom printer files are the type of auxiliary file you use with PageMaker 5.0, Aldus FreeHand 4.0, PrePrint 1.6, and other applications that support version 4.x PPD files.

Custom printer files are a lot like PPD files—they're text-only files that describe the features of a PostScript device. To use a custom printer file in PageMaker 5.0, Aldus FreeHand 4.0, or PrePrint 1.6, select it in the same manner you select a PPD file. There are three basic differences between custom printer files and PPD files:

- Custom printer files are OK to edit

You should never edit a PPD file, but it's fine to edit a custom printer file—that's the whole idea behind custom printer files.

- Custom printer files describe the *exact* features of *your* printer
PPD files describe the model-specific features of a PostScript device—what its features were when it left the factory. A custom printer file describes the *exact* feature set of your PostScript device, including any changes (added fonts, memory, and so forth) made to its original configuration.

Which Aldus Programs Use Which Printer Description Files

Application	Printer description file	Auxiliary printer description file
PageMaker 4.0	APD	—
PageMaker 4.2/4.2a	PPD (v. 3.0)	PDX
PageMaker 5.0	PPD (v. 4.x)	custom printer files
Aldus FreeHand 2.x	APD	—
Aldus FreeHand 3.x	PPD (v. 3.0)	PDX
Aldus FreeHand 4.0	PPD (v. 4.x)	custom printer files
Aldus PrePrint 1.0–1.5x	PPD (v. 3.0)	PDX
Aldus PrePrint 1.6x	PPD (v. 4.x)	custom printer files

- Custom printer files must be used in conjunction with a PPD file
- Custom printer files augment the information in a PPD file; they don't replace the PPD file. To work with a PPD file, custom printer files link themselves to a specific PPD file by using an “*Include” line that lists a particular PPD file. The “*Include” line is always listed at the end of the custom printer file. For example, a custom printer file for the “Agfa_ProSet9800SF v52.3” PPD would contain a line that says:

```
*Include: "AGFA_ProSet9800SF v52.3"
```

Because of this convention, custom printer files are often called “Include” or “PPD including” files. Custom printer files are also called “local customization” files.

When you select a custom printer file in PageMaker 5.0, Aldus FreeHand 4.0, or another application, that application parses (reads) the information in the custom printer file, then parses the PPD file referenced in the custom printer file’s “*Include” line. If the custom printer file and PPD file both contain definitions for a certain variable—free virtual memory, for instance—the first definition takes precedence. Since the system parses the custom printer file first, its definitions will override any definitions for the same variables in the PPD file.

Understanding PDX (Printer description extension) files

PDX files are the type of auxiliary printer file used by Aldus applications designed to work with version 3.0 PPD files. Such applications include PageMaker 4.x for the Macintosh, Aldus FreeHand 3.x, and PrePrint 1.0–1.5x.

PDX files are text-only files that append or override information contained in a PPD file. Like custom printer files, PDX files have an “*Include” line that links a PDX file to a particular PPD file. Unlike custom printer files, PDX files list their “*Include” line toward the beginning of the file. When an application uses a PPD and a PDX file together, it first parses the introductory part of the PDX file and when it reaches the “*Include” line, parses the PPD file. When it finishes parsing the PPD file, it parses the rest of the PDX file. If the PDX and PPD files contain different settings for the same variable, the last definition it parsed (the definition in the PDX) takes precedence. ■



Anatomy of a PPD and Custom Printer File

The next few pages contain annotated examples of abbreviated PPD and custom printer files for the fictitious “GroovyLaser” PostScript device. We hope this information helps demystify these important files so you’ll be able to work with them more comfortably and effectively.

The structure of PPD and custom printer files

PPD and custom printer files consist of lines of PostScript-language entries that follow the standards outlined in the PPD file format specifications written by Adobe Systems, Inc. Entry lines in PPD and custom printer files fall into four categories:

- Comment lines

Comment lines begin with an asterisk and percentage symbol (*%), end with a carriage return, and provide easy-to-read information about the file’s contents. Programs that read PPD files ignore comment lines.

- Keyword lines

Basic or main keywords appear in the PPD and custom printer files as asterisks followed by the keyword (for example, “*PageSize” or “*Font”) followed by a value. Values can be option keywords, each of which defines a valid option for the main keyword; values for the keyword (such as true or false); or PostScript code used to invoke a specific feature. PostScript code in printer description files is contained



between quotation marks. In the annotated files on these pages, any PostScript code has been replaced by the word *invocation*.

- Query keyword lines

Query keyword commands begin with an asterisk followed by a question mark and the keyword (as in “*?FileSystem”). Query keywords return information from the PostScript device about its status or the current setting of an option.

- Default keyword lines

Default keywords are closely related to the main keywords: When a device has multiple options for a keyword, the default keyword line specifies the device’s default.

An annotated guide to the GroovyLaser PPD file

What follows is an annotated guide to the PPD file for the GroovyLaser PostScript device. The GroovyLaser is not a real printer, and what follows isn’t a real PPD file—due to space constraints, we’ve abbreviated it extensively and have not supplied explanations for every line.

For the sake of convenience and clarity, we’ve divided our descriptions of PPD keyword lines into sections such as “Introductory comments,” “Font information,” and so forth. Be aware that some PPD files may not follow this structure. Adobe makes some recommendations about the location of certain keywords—for instance, the keywords listed under “Introductory comments” can make a PPD file faster to parse if they’re at the beginning of the PPD file—but there are few strict rules about keyword order.

Introductory comments

The introductory comments appear at the beginning of the PPD file, and provide general information about how the PPD file should be used.

- A *PPD-Adobe: "4.0"
- B *FormatVersion: "4.0"
- C *FileVersion: "2.1"
- D *PCFileName: "GROOV470.PPD"
- E *LanguageVersion: English
- F *Product: "(GroovyLaser)"
- G *PSVersion: "(47.0) 1"
- H *ModelName: "GroovyLaser"
- I *NickName: "GroovyLaser v47.0"

A The “*PPD-Adobe” line must come first in all valid PPD files. The number between quotation marks indicates the Adobe PPD file format specifications to which the PPD file conforms.

B The “*FormatVersion” line indicates which version of the Adobe PPD file format specification to which the PPD file was written.

Note: Although the “*PPD-Adobe” and “*FormatVersion” lines convey the same information about the PPD file, they are used differently by some parsing applications. The “*PPD-Adobe” keyword was not a required keyword for version 3.0 PPD files, so some applications rely on the “*FormatVersion” keyword line to determine the version of the PPD file.

C The “*FileVersion” line indicates the version of the PPD file itself. The version of a PPD file will change if a manufacturer rewrites it for any reason.

D The “*PCFileName” line lists what the filename of the PPD file should be if it’s used on a DOS- or Windows-based computer.

E The “*LanguageVersion” line indicates which language is used for comments and translation strings, such as those used to display error messages, ink names, and anything else that is likely to be viewed as part of an application’s user interface.

F The “*Product” line reflects the PostScript device’s name stored in *statusdict*, the printer’s ROM-resident PostScript dictionary that stores device-specific information.

G The “*PSVersion” line lists, in parentheses, what PostScript language version the PostScript device uses and, after the parentheses, the PostScript interpreter’s revision number. Some new printers have “PSversion” numbers that follow a longer format.

H The “*ModelName” line represents the common name of the device.

I The “*NickName” line refers to the local name of the PostScript device—theoretically, the informal name by which its users refer to it. If you use PageMaker 5.0 for

Windows, the “NickName” is what PageMaker displays by default in the “Type” drop-down menu in the “Print document” dialog box.

Note: There isn’t anything in the introductory comments that indicates the PPD file’s Macintosh filename. PageMaker 5.0 for the Macintosh lists PPD and custom printer files by their filenames (the name displayed in the Finder) in the “Type” menu of the “Print document” dialog box.

General information and defaults

The information in this section of the PPD file defines some of the most basic characteristics of your PostScript device. (True = yes; False = no.)

*% General Information and Defaults

```
① *ColorDevice: False  
② *FreeVM: "434204"  
③ *LanguageLevel: "1"  
④ *VariablePageSize: False  
⑤ *DefaultResolution: 300dpi
```

- ① The “*ColorDevice” line indicates whether your PostScript device can print in color.
- ② The “*FreeVM” line indicates how many bytes of free virtual memory (RAM) the PostScript device has available for imaging pages. This setting should be correct for any PostScript device that has not been modified since it left the factory.
- ③ The “*LanguageLevel” line indicates what level (1 or 2) of the PostScript language your PostScript device supports.
- ④ The “*VariablePageSize” line indicates whether your PostScript device uses custom paper sizes. If this line reads “False,” PageMaker 5.0 and Aldus FreeHand 4.0 will not allow you to define a custom paper size within their printing dialog boxes.
- ⑤ The “*DefaultResolution” line indicates the PostScript device’s default resolution in dots per linear inch in both the x and y dimensions. If the PostScript device supports a resolution in which the x and y dimensions are not equal—for instance, if the device can print 300 dpi in the x dimension and 600 dpi in the y dimension—this line would follow the format, “*DefaultResolution: 300 x 600 dpi.”

Halftone information

The “Halftone information” section provides basic defaults and procedures that your PostScript device uses to image halftone data.

*% Halftone Information =====

```
⑥ *ScreenFreq: "60.0"  
⑦ *ScreenAngle: "45.0"  
⑧ *DefaultScreenProc: Dot  
⑨ *ScreenProc Dot: "invocation"  
  *ScreenProc Line: "invocation"  
  *ScreenProc Ellipse: "invocation"
```

- ⑥ The “*ScreenFreq” line reflects your PostScript device’s default halftone screen frequency.
- ⑦ The “*ScreenAngle” line reflects your PostScript device’s default halftone screen angle.
- ⑧ The “*DefaultScreenProc” line defines the default halftone spot function (halftone dot shape) for your PostScript device.
- ⑨ The “*ScreenProc” lines provide the PostScript-language code, replaced here with the word *invocation*, for a spot function (halftone dot shape). You can have more than one “*ScreenProc” line in a PPD file.

Paper-handling information

Each PostScript device has a finite number of predefined paper sizes. The “Paper Handling” section describes the dimensions of those sizes, their input slots, and information on how the PostScript device should handle them.

- ⑩ Each “*PageSize” line sets up for each page size the paper source (such as an input slot or a paper tray) and a frame buffer (an area in the device’s memory that stores the imageable region of the page). For each “*PageSize” line there is a corresponding “*ImageableArea” and “*PaperDimension” line.
- ⑪ The “*PageRegion” lines establish a frame buffer but do not specify a paper source. “*PageRegion” is typically used instead of the “*PageSize” keyword when you print with manual feed or select a specific paper source (for instance, “Upper tray”).

- ⑩ For each paper size, the “*ImageableArea” lines define the printable area centered within the bounding box defined by the “*PaperDimension” line. Imagesetters can image the entire PaperDimension area; the imageable area for lower-resolution or desktop printers is smaller because of the paper-handling mechanisms used and, often, their limited amount of available memory.
- ⑪ The “*PaperDimension” lines define the measurements, in points, of each paper size. The first number represents the width of the paper size, the second number defines the height.

```
*% Paper Handling =====
❸ *PageSize Letter/US Letter: "statusdict /lettertray get exec"
  *PageSize Legal/US Legal: "statusdict /legaltray get exec"
❹ *PageRegion Letter/US Letter: "letter"
  *PageRegion Legal/US Legal: "legal"
❺ *ImageableArea Letter/US Letter: "15 8 597 784 "
  *ImageableArea Legal/US Legal: "15 8 597 1000 "
❻ *PaperDimension Letter/US Letter: "612 792"
  *PaperDimension Legal/US Legal: "612 1008"
❻ *DefaultInputSlot: Cassette
  *InputSlot Cassette: ""
❾ *DefaultManualFeed: False
```

- ❷ The “*DefaultInputSlot” line determines which input slot (paper tray) is the default for your PostScript device. Each input slot must be defined in an “*InputSlot” line, which contains any PostScript code necessary for invoking that feature of your printer.
- ❸ The “*DefaultManualFeed” line reflects whether the PostScript device’s manual feed option is on (True) or off (False) by default.

Font information

This section of the PPD file lists all your PostScript device’s built-in fonts—fonts resident in the ROM (read-only memory) of your printer. The “Font information” section of a *custom printer file*, on the other hand, generally lists fonts that have been downloaded to the printer’s hard disk. PageMaker, Aldus FreeHand, and PrePrint will not download the fonts listed in your PPD or custom printer file.

- ❶ The “*DefaultFont” line indicates what font your PostScript device will use if a print job calls for a font not built into or downloaded to your PostScript device.

```
*% Font Information =====
❷ *DefaultFont: Courier
❸ *Font Courier: Standard "(001.004)" Standard ROM
  *Font Courier-Bold: Standard "(001.004)" Standard ROM
  *Font Courier-BoldOblique: Standard "(001.004)" Standard ROM
  *Font Courier-Oblique: Standard "(001.004)" Standard ROM
```

- ❶ “*Font” lines provide each font’s PostScript name, type of encoding, version number, and location in the printer. PageMaker 5.0, Aldus FreeHand 4.0, and Aldus PrePrint 1.6x do not use all of this information.

Color separation information

This section provides device-specific information necessary for printing spot- and process-color separations, including optimized screen settings (angles and frequencies) for the different resolutions at which your PostScript device can print.

When you print process-color separations from PageMaker 5.0, the angle and frequency settings associated with each “Optimized screen” setting you select in the “Color” printing dialog box come from this section of the PPD file. You may notice that many of the angle and frequency values aren’t the same as those used in traditional processes, and may even look somewhat arbitrary. That’s because PostScript angles and frequencies must be drawn on a strict grid, which limits the number of angle-and-frequency combinations that the PostScript device can reproduce. PostScript device manufacturers test their products extensively to determine which screens produce the best, most moiré-free halftones possible. Don’t override these screen settings unless you and your commercial printer decide your job requires special treatment.

Note: Due to space constraints, we have only shown one set of screening values for the GroovyLaser device—the screen angles and frequencies associated with the 60 lpi (lines per inch) frequency and 300 dpi (dots per inch) resolution combination. Typically, however, PPD files contain at least one other set of screening values. For instance, many PPD files for 300 dpi devices contain a set of screening values for 53 lpi / 300 dpi. PPD files for high-resolution devices often contain several sets of screening values.

```
/* Color Separation Information =====
① *DefaultColorSep: ProcessBlack.60lpi.300dpi/60 lpi / 300 dpi
/* For 60 lpi / 300 dpi =====
② *ColorSepScreenAngle ProcessBlack.60lpi.300dpi/60 lpi / 300 dpi: "45"
*ColorSepScreenAngle CustomColor.60lpi.300dpi/60 lpi / 300 dpi: "45"
*ColorSepScreenAngle ProcessCyan.60lpi.300dpi/60 lpi / 300 dpi: "15"
*ColorSepScreenAngle ProcessMagenta.60lpi.300dpi/60 lpi / 300 dpi: "75"
*ColorSepScreenAngle ProcessYellow.60lpi.300dpi/60 lpi / 300 dpi: "0"
③ *ColorSepScreenFreq ProcessBlack.60lpi.300dpi/60 lpi / 300 dpi: "60"
*ColorSepScreenFreq CustomColor.60lpi.300dpi/60 lpi / 300 dpi: "60"
*ColorSepScreenFreq ProcessCyan.60lpi.300dpi/60 lpi / 300 dpi: "60"
*ColorSepScreenFreq ProcessMagenta.60lpi.300dpi/60 lpi / 300 dpi: "60"
*ColorSepScreenFreq ProcessYellow.60lpi.300dpi/60 lpi / 300 dpi: "60"
```

① The “*Default-ColorSep” line defines the default set of screening values (this is what will be listed in the “Optimized screen” dropdown menu of PageMaker’s “Color” printing dialog box).

In this example, the “*Default-ColorSep” line

indicates that default set of screening values are those associated with 60 lpi / 300 dpi. Therefore, unless you selected other screening values, your color separations would print at the angles and frequencies listed under “*% For 60 lpi / 300 dpi ==...”

- ② The “*ColorSepScreenAngle” lines define an angle (listed between quotation marks at the end of the line) for a color at a specific optimized screen frequency combination (screen frequency and resolution). In this example, the angle for process black would be 45 degrees for the optimized screen 60 lpi / 300 dpi.
- ③ The “*ColorSepScreenFreq” lines define a frequency (listed between quotation marks at the end of the line) for a color at a specific resolution. Screen frequency values are expressed in lines per inch.

An annotated guide to the GroovyLaser custom printer file

Below is an example of a very simple custom printer file for the GroovyLaser device. We created it by typing it directly into a text editor.

If you create custom printer files using the “Update PPD” Addition, the PPDShell.ps file, or by editing a PDX file, your custom printer files will probably be a good deal longer and more complex. Custom printer files need contain only a few lines: at absolute minimum, all they really need is the “*Include” line to link them to a certain PPD file. Of course, your custom printer files will contain other information that will append or override information contained in the PPD files with which you use them.

A custom printer file is always parsed like a PPD file and must conform to Adobe’s *PostScript Printer Description File Format Specification*, so in a sense, a custom printer file is itself a PPD file. Any line that can appear in a PPD file can also appear in a custom printer file.

- ④ The first two lines in this custom printer file are comments—they aren’t necessary, but they can help explain why the custom printer file was created and how it should be used.
- ⑤ The “*FreeVM” line defines how much free virtual memory is available on your PostScript device. This setting doesn’t have to go into a custom printer file, but it’s one of the keywords you’re most likely to use in a custom printer file. Both the “Update PPD” Addition and the PPDShell.ps file automatically query your printer



```

④ *% This is a custom printer file for the GroovyLaser. It
    *% increases the FreeVM number and adds a couple of fonts.
⑤ *FreeVM: "1407072"
⑥ *Font Minion-Regular: Standard "(001.000)" Standard Disk
    *Font Minion-Semibold: Standard "(001.000)" Standard Disk
    *Font Minion-Italic: Standard "(001.000)" Standard Disk
    *Font Minion-SemiboldItalic: Standard "(001.000)" Standard Disk
⑦ *Include: "GROOV470.PPD"

```

for how much free virtual memory it has and adds the “*FreeVM” line to the custom printer files they create.

⑥ Font lines don’t have to appear in a custom printer file, but, like the “*FreeVM” line, they’re some of the most fre-

quently used lines in custom printer files. Both the “Update PPD” Addition and the PPDShell.ps file automatically query your PostScript device for fonts downloaded to its hard drive and add that information to the custom printer files they create.

⑦ The “*Include” line is the only required line for a custom printer file. It must contain the exact filename of the PPD file to which the custom printer file is linked. That filename must be enclosed in straight quotation marks. If you’re creating a custom printer file that you’ll use on a DOS- or Windows-based computer, you must use the PPD file’s PC filename and type it in all caps.

If you’re creating a custom printer file for PageMaker 5.0 for the Macintosh, you must place a carriage return after the “*Include” line. ■



Creating and Editing Custom Printer Files

If you want to take full advantage of the unique characteristics of your PostScript device and receive the fastest possible output, you’ll need to create a custom printer file. Custom printer files are text-only files you can create and edit in any application (such as Microsoft Word or TeachText) that can open and save files in the text-only format.

Using the “Update PPD” Addition and the PPDShell.ps file

Using the “Update PPD” Addition that comes with PageMaker 5.0 is probably the easiest way to create a custom printer file. To use the “Update PPD” Addition, all you have to do is select “Update PPD...” from the Additions submenu of PageMaker’s Utilities menu. The “Update PPD” Addition queries the PostScript device you have selected in the Chooser, and makes a custom printer file based on the PPD file of your choice.

Like the “Update PPD” Addition, the “PPDShell.ps” file queries your printer and automatically creates a custom printer file. To use the PPDShell.ps file, download it to your printer with any downloading utility that’s compatible with the LaserWriter 8.x or PSPrinter 8.x driver and can create a log file (a text file that the utility saves on your hard disk). The LaserWriter Utility 7.4.1 meets these requirements.

Both the “Update PPD” Addition and the PPDShell.ps utility include the following information in the custom printer files they create:

- A free virtual-memory setting for your PostScript device
To ensure the “Update PPD” Addition or PPDShell.ps file takes an accurate reading of your printer’s free virtual memory, turn your printer off and back on and, if you usually have a certain set of fonts or other resources downloaded to your printer’s RAM, redownload those fonts or resources before running the “Update PPD” Addition or using the PPDShell.ps file.
- A list of the fonts stored on your printer’s hard disk
- Several additional paper sizes if your PostScript device supports custom paper sizes—these paper sizes include the maximum paper size your printer can deliver (up to 100 x 100 inches), standard U.S. “Extra” and “Transverse” paper sizes, and other common paper sizes such as those used in magazine production

Note: The versions of the “Update PPD” Addition and the PPDShell.ps utility that shipped with PageMaker 5.0 do not correctly add “.Extra” and “.Transverse” paper sizes in the custom printer files they create. The new versions of the “Update PPD” Addition performs this function correctly. For more information, see “Aldus PageMaker 5.0 Filter/Driver Pack Plus...” on page 13.

For detailed information on how to use the “Update PPD” Addition, see *Aldus TechNotes*, vol. 1, no. 2, Macintosh Products Edition, pp. 7–8 or, for information on the “Update PPD” Addition and the “PPDShell.ps” file, call the Aldus FaxYI system at (206) 628-5737 and request document #215120, “Creating Custom Printer Files for PageMaker 5.0 Comprehensive Overview.”

Creating a custom printer file that lists fonts contained in your printer’s RAM

If you want the “Update PPD” Addition to query your printer for fonts stored in the printer’s RAM (random access memory) and ROM (read only memory) and add those fonts to the custom printer files it creates, you have two options:

- Obtain the new version of the “Update PPD” Addition.

The new version of the Addition has an easy-to-use option for querying your printer for its RAM and ROM fonts. The new version of the “Update PPD” Addition will be available as part of the Macintosh PageMaker 5.0 Filter/Driver Pack Plus. For more information, see “Aldus PageMaker 5.0 Filter/Driver Pack Plus Available Soon” on page 13.

- Use a resource editor such as Apple’s ResEdit to change the original version of the “Update PPD” Addition so it will query for RAM and ROM fonts.

Editing a program file always involves some risk, so be sure to make a backup copy of the “Update PPD” Addition before you edit it. If you would like to change the original version of the “Update PPD” Addition so it will query for RAM and ROM fonts, call the Aldus FaxYI system and request document #215104, “Modifying the ‘Update PPD’ Addition to Query for RAM-resident Fonts.”

By default, both the original and the new versions of the “Update PPD” Addition query printers for fonts that are on the printer’s hard disk(s) and add only those fonts to the custom printer files they create. We recommend that you not use either version of the “Update PPD” Addition to query for fonts in RAM (temporarily downloaded fonts) unless you’re confident you can keep track of which fonts are downloaded to your printer’s RAM at all times. If you create a custom printer file that contains RAM fonts and they’re not present in RAM when you print later, those fonts will print in your printer’s default font, which is probably Courier.

In order for fonts to remain in your printer’s RAM, you must redownload them each time your printer is turned off and back on and each time you experience a virtual memory overload (VModelError) or another serious error that causes your PostScript device to crash, clearing its memory.

Creating and editing custom printer files in a text editor

You probably won’t ever have to create a custom printer file in a text editor, but if you’d like to try it or need to edit your custom printer file, keep in mind the following:

- If you want to change a line in a PPD file, copy and paste that line to the custom printer file, and edit the line there.
- Each keyword line in a PPD or custom printer file must begin with an asterisk (*).
- Each keyword line in a PPD or custom printer file may contain no more than 255 characters.
- Carriage returns don’t necessarily indicate a new line—in PostScript code, they’re treated as white space characters (as are regular spaces and tab characters).
- Entries in the PPD and custom printer files are case sensitive.

- To create a custom printer file in a text editor
1. In your text editor, type in the skeleton text below:


```
*% Your comments for identifying the custom printer file
*Include: "GROOV470.PPD"
```
 2. Replace the term “GROOV470.PPD” with the exact filename of the PPD file on which you’re basing the custom printer file.

Be sure to enclose the PPD filename in straight quotation marks. If you’re creating a custom printer file for a PPD file that will be used on a DOS- or Windows-based computer, type the PPD filename in uppercase.
 3. Replace the phrase “Your comments for identifying the custom printer file” with a couple of words that will help you remember why you created the custom printer file or how it should be used.

Your comment line could say something like, “*% Custom printer file for Joe’s GroovyLaser by the window. Corrects the FreeVM setting in the GroovyLaser PPD.” This step isn’t necessary, but can help you identify the custom printer file later. You can use as many comment lines as you like—just make sure each one begins with the percentage sign and does not exceed 255 characters.
 4. Add lines to append or override information in the PPD file.

For a line to append or override information in the PPD file with which the custom printer file will be used, you must list it before the “*Include” line in the custom printer file. Which lines you add is up to you.

Most people creating custom printer files to use in conjunction with PageMaker 5.0 or Aldus FreeHand 4.0 are likely to want to add a “*FreeVM” line or font lines. For information on these and other lines you might want to add to a custom printer file, see “Anatomy of a PPD and Custom Printer File” on pp. 5–10.
 5. If you’ll be using the custom printer file with PageMaker 5.0 for the Macintosh, make sure there’s a carriage return after the “*Include” line.
 6. Save your file in the text-only format to the Printer Descriptions folder.

The Printer Descriptions folder will be located in the Extensions folder of your System Folder if you’re using System 7.x, or, if you’re using System 6.x, your Printer Descriptions folder will be located in your System folder. ■

Advanced Techniques and Troubleshooting Tips for PPD and Custom Printer Files

What follows is a list of advanced techniques and troubleshooting tips for working with PPD and custom printer files. We hope these tips help you achieve better PostScript printing results from PageMaker 5.0 and Aldus FreeHand 4.0.

Making sure your application defaults to the right paper tray

Paper trays don’t come with all printers, so sometimes a printer manufacturer will write a PPD file that lists the default input source as “Multipurpose” (the manual feed option). For instance, the version 4.0 PPD files for the Apple LaserWriter Pro630, Apple Personal LaserWriter NT, and Apple Personal LaserWriter NTR all list “Multipurpose” as the default input source.

If you’re using a PPD that contains this default setting, you might find that your printer behaves as though it’s out of paper when you print to it—if it has an “Out of paper” light, it will blink until you manually feed it a piece of paper. To remedy this situation, you can:

- Manually feed paper into the printer.



- Remember to select something other than the "Multipurpose" source option each time you print.
- Change the default source option by creating and editing a custom printer file. Investing a couple of minutes in this procedure will ensure you don't have to manually feed paper into the printer or change the paper source option all the time. Follow the instructions below.

► **To create a custom printer file that changes your default input source**

1. Using any of the methods described in "Creating and Editing Custom Printer Files" pp. 10–12, create a custom printer file for the PPD file that contains the "Multipurpose" default source option.
2. In a word processor that can save in the text-only format, open the PPD file that contains the "Multipurpose" paper source default setting.
3. Locate and copy the line that says:

*DefaultInputSlot: XXX

"XXX" should equal either *Upper* or *Lower*, depending on the printer.

4. Close the PPD file and open your custom printer file.
5. Anywhere before the "*Include" line, create a new line and paste into it the "*DefaultInputSlot:XXX" line from the PPD file.
6. If "XXX" was originally *Upper*, change it to *Lower*. If "XXX" was originally *Lower*, change it to *Upper*.
7. Save your custom printer file in the text-only format.
8. Make sure you select your custom printer file, not the PPD file, the next time you print from PageMaker, Aldus FreeHand, or PrePrint.

Ensuring grayscale TIFF images don't print too darkly from PageMaker 5.0

On some PostScript devices, TIFF images from PageMaker 5.0 may print too darkly. Areas of 1 to 50 percent gray may print up to two times darker than they should and grays of over 50 percent may print as black.

This problem can occur on Level 1 PostScript devices that have RIPs (raster image processors) that use color operators even though they only print in black and white. When PageMaker 5.0 uses a special PostScript routine to determine whether such a device prints in color or black and white, it incorrectly recognizes the device as a color printer and therefore incorrectly calculates the gray values in TIFF images.

You can avoid this problem completely by updating PageMaker 5.0 to 5.0a. See "Aldus PageMaker 5.0 Filter/Driver Pack Plus..." on this page for more

Aldus PageMaker 5.0 Filter/Driver Pack Plus Available Soon

A Filter/Driver Pack Plus will be available for PageMaker 5.0 for the Macintosh in early Q1 1994. The pack will include several new and updated filters, a new version of the "Update PPD" Addition, and a patcher that will update PageMaker 5.0 to 5.0a.

As of this writing, the Filter/Driver Pack Plus has not yet been completed, so some of the contents may change. For detailed information on the Filter/Driver Pack Plus, call the Aldus FaxYI system at (206) 628-5737 and request document #215001, "Aldus PageMaker Filter/Driver Pack Plus for the Macintosh."

A similar Filter/Driver Pack Plus for PageMaker 5.0 for Windows was made available in December 1993.

How to obtain the PageMaker 5.0 Filter/Driver Pack Plus

All CustomerFirst members and registered and authorized imaging centers will receive a disk set of the Filter/Driver Pack Plus automatically. If you won't receive a copy automatically or you need to obtain the Filter/Driver Pack Plus components as quickly as possible, you can download them from the Aldus Forum on CompuServe or America Online. Each component of the Filter/Driver Pack Plus will be available in these locations as soon as each component is finished.

You can also order the PageMaker 5.0 Filter/Driver Pack Plus from Aldus for a shipping and handling charge of \$9.95. Call (206) 628-2320 for more information. ■

information. Until you obtain and install PageMaker 5.0a, you can correct the problem by creating and editing a custom printer file that contains a patch that will ensure PageMaker calculates the gray values in TIFF images correctly.

For information on creating a custom printer file that will correct this problem, call the Aldus FaxYI system and request document #215112, "TIFF Images Print Too Darkly to Imagesetter from PageMaker 5.0."

Ensuring grays in all objects print the same as they did in PageMaker 4.2

If the gray values in all objects (not just TIFF images) in composite print jobs aren't printing at the same density to the same PostScript device as they did from PageMaker 4.x, copy the calibration information from the PDX (printer description extension) file you used in PageMaker 4.2 to the custom printer file you use in PageMaker 5.0.

This procedure is necessary because the PageMaker-specific calibration information included in PDX files is not part of the Adobe PPD file format specification.

► **To copy PDX calibration information to a custom printer file**

1. Make sure you have a custom printer file for the PostScript device with which you'd like to use the PageMaker 4.x PDX calibration information.

If you don't have a custom printer file yet, create one using one of the techniques outlined in "Creating and Editing Custom Printer Files" on pp. 10–12.

2. Open the PageMaker 4.x PDX file for the same PostScript device in a word processor that can open and save files in text-only format.

Your PDX files should be located in the PPDs folder inside your Aldus folder within your System Folder.

3. Find the section that begins:

*% PageMaker calibration functions

4. Copy the entire calibration section, including the "*Transfer Normalized:" section.

Note: You do not need to copy the "*Transfer Normalized.Inverse" section; PageMaker 5.0 will not parse it. Instead, PageMaker 5.0 will use the values in the "*Transfer Normalized" section for both positive and negative composite print jobs.

5. Close the PDX file without saving it.

6. Open the custom printer file, create a new, blank line anywhere before the "*Include" line, and paste the calibration information there.

7. Save the file in text-only format.

8. Be sure to select the custom printer file in the "Type" menu of PageMaker's "Print document" dialog box when you print to that PostScript device. ■



Improving Aldus Persuasion's Performance

If screen redraw or moving around your Aldus Persuasion presentation is slower than you'd like, there are several things you can do to improve Persuasion's performance.

First, make sure Persuasion is installed on a local hard drive instead of a network drive. In addition, move the Persuasion presentation with which you're working to the same local hard drive as the one that contains Persuasion's program files.

Second, avoid resizing imported PICT graphics in a Persuasion presentation file. Resized PICT files cause slower-than-normal screen redraw. The higher the percentage of resizing, the slower your screen redraw will be. Resize your PICTs in another application before bringing them into Persuasion.

If these tips don't adequately improve performance, consider following the memory-optimization tips below.

Increase the size of your Disk Cache or RAM Cache

Use the Memory Control Panel to increase the size of your Disk Cache (System 7.x) or RAM Cache (System 6.x). This cache is a portion of RAM set aside to hold the information most recently read from your hard disk. The next time your program needs the same information, it reads it from the cache (in RAM), which is much faster than reading it from disk. The bigger your cache, the more your program will be able to read from RAM instead of your hard disk, and the faster it will go. When you allocate RAM for your cache, make sure you leave enough RAM for your System software, Aldus Persuasion, and other applications you want to run at the same time.

Load the Persuasion presentation file onto a RAM disk

A RAM disk is a portion of your Macintosh's RAM (random access memory) that's set aside to be used as a hard disk. Since RAM holds information in an electrical current and has no moving parts, a RAM disk operates much more quickly than a hard disk.

RAM is also volatile—if the electrical current that holds the information stored in RAM is disrupted (if you turn your system off or crash), all the information stored in RAM will be lost. Therefore, working on your presentations while they're on a RAM disk is riskier than working on them while they're stored on your hard disk.

There are two ways to create a RAM disk. You can use a utility such as RamDisk+ or AppDisk, or you can use the Memory Control Panel. The RAM disk option in the Memory Control Panel is available only on the Macintosh Powerbook 160 or 180, or on any Macintosh computers with a 68040 processor—for instance, a Macintosh Quadra, Centris, LC 475, or Performa 475 or 476.

► To create a RAM disk using the Memory Control Panel

1. Open the Memory Control Panel.
2. Select the "RAM disk" option.
3. Enter the size of the RAM disk you want to create.

Make sure the RAM disk is large enough to accommodate the biggest Persuasion presentation on which you plan to work and that it leaves enough RAM free to run Persuasion, your System software, and any other applications you want open at the same time.

4. Close the Memory Control Panel and restart your Macintosh.

The RAM disk will appear on your Desktop like any other hard disk drive.

5. Copy your presentation to the RAM disk.

Make sure you leave a backup copy on your hard drive. You will now be able to launch Persuasion and open your presentation from the RAM disk.

6. When you're finished editing your presentation, save it, exit Persuasion, and copy it back to your hard drive. ■

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