PostScript Quick Tips: Creating a Background Text Message

Copyright © 1993 by Herb Weiner (herbw@wiskit.com). All rights reserved. Permission is hereby granted to use these tips in the design and production of any document. However, the PostScript code provided here may **not** be incorporated into any software product without a license from the author.

Have you ever seen paper with the word "Confidential" printed diagonally in a large outline font from the lower left corner to the upper right corner? Have you ever wished you could label your own documents "Preliminary", "Draft", "For Review Only", or with some similar message? This month's Quick Tip will show you how to create a background text message for your pages.

Since we're using PostScript, this technique will only work on PostScript output devices. You will not see your message on the screen, and it can not be printed to QuickDraw printers.

Full Page Background Message

Some programs, such as Microsoft Word, allow you to place PostScript code directly into the document. If you place PostScript code into the header, that PostScript code automatically becomes part of the background of every page. To place a background message in a Microsoft Word document:

• Select "Header" from the "View" menu.

• Carefully type in the PostScript code shown in Figure 1. Be sure to press the return key at the end of the last line. If you wish, you may change the font (Times-Roman) or the message (Confidential). Note that you must enclose the message in parentheses, but that the parentheses will not print.

Be careful not to confuse the angle braces "{" and "}" with parentheses. Parentheses are used only in the comment lines (beginning with "%") and in the line beginning "/message". The remainder of the PostScript code uses angle braces.

The PostScript code in Figure 1 prints the message in light gray (A setgray value of 0.9). You can make

Figure 1. Full Page Background Message

```
%! Copyright (C) 1993 Herb Weiner. All Rights Reserved.

% Set the font (Times-Roman) and message (Confidential) here
/Times-Roman findfont 100 scalefont setfont
/message (Confidential) def

% Get the size of the bounding box for the message
newpath clippath pathbbox /h exch 3 index sub def
/w exch 3 index sub def translate

% Compute the size and orientation of the message
newpath 0 0 moveto message true charpath pathbbox
/y2 exch def /x2 exch def /y1 exch def /x1 exch def
/ww x2 x1 sub def /hh y2 y1 sub def /k hh ww div def
h w gt {w h div}{h w div} ifelse k lt
{h w gt {w 0 translate 90 rotate /h w /w h def def} if
/s h hh div def s s scale w s div ww sub 2 div 0 translate}
{/k2 k k mul def
/b k h mul k2 w mul sub 1 k2 sub div def
/c w b sub def /a k c mul def /d h a sub def
/s c c mul d d mul add sqrt ww div def
b 0 translate d c atan rotate s s scale} ifelse
x1 neg y1 neg translate

% Display the message in light gray
0.9 setgray 0 0 moveto message show
```

the message lighter or darker by changing the number before "setgray" in the last line of the PostScript code. The value must be between 0 (black) and 1 (white).

If you wish, you can use black outline rather than gray filled letters for your message. To do this, replace the last two lines of the PostScript code in Figure 1 with the last five lines of the PostScript code from Figure 2.

• Select all of the text you have just entered. Hold down the shift key, and select "PostScript" from the style box on the ruler.

• If you wish, you can hide the PostScript text on the screen. Choose "Preferences..." from the "Tools" menu. Click on the "View" icon, then uncheck the "Hidden Text" option in the list of items to "Show."

Note that the PostScript code automatically calculates the size and orientation of the message based on the page size in use. If you change the page size, or switch from portrait to landscape orientation, the size and orientation of the message are adjusted automatically.

In general, the header is not imported when a Microsoft Word document is imported into another program. Thus, the background message will be discarded if the Word document is

imported into Aldus PageMaker or Quark XPress.

Partial Page Resizable Message

Since most programs do not allow you to place PostScript code directly into the document, it is usually more convenient to create an EPSF (Encapsulated PostScript Format) file.

EPSF files can be imported into most desktop publishing programs. If an EPSF file is placed on a master page, the message will appear on each page of the document; however, the message can also be placed on a individual pages. Furthermore, they can be resized, so messages do not need to be full page. For example, a message may be placed over a graphic or image to indicated that it is only a proof.

To create an EPSF file:

• Double click on Apple's TeachText application to launch it. An Untitled window opens. **Carefully** type in the PostScript code shown in Figure 2. Be sure to press the return key at the end of the last line. Choose "Save" from the File menu and save this file as "proof.epsf", then choose "Quit" from the File menu.

If you have already entered the text in Figure 1, note that the section of PostScript code beginning with the comment "% Compute the size and orientation of the message" is identical in Figure 1 and Figure 2.

You can therefore save some time by using copy and paste.

The PostScript code in Figure 2 prints the message using a three point white outline, with a one point black outline on top. This makes it easy to see the message regardless of whether it is on top of a light colored or dark colored background. If you wish, you can change the width of the outlines by changing the "3 s" in the fourth line from the end and the "1 s" in the second line from the end of the PostScript code.

If you wish, you can use gray filled letters rather than black outline letters. To do this, replace the last five lines of the PostScript code in Figure 2 with the last two lines of the PostScript code from Figure 1.

- Place or import this EPSF file the same way you import any other EPSF file. Note, however, that there is no screen preview image for this EPSF file. Therefore, your program will probably display a gray or white box with text describing the EPSF file. The EPSF image will print correctly on any PostScript printer.

- Front to back layering is significant when this EPSF image overlaps other elements on the page. For best results, move continuous tone (gray scale or color) images to the back (so that they print first). Since continuous tone images are opaque, they completely obscure anything behind them. Place the proof.epsf image in front of the continuous tone images, but behind everything else. This allows the white outline in the proof.epsf graphic to be visible in front of continuous tone images, without obscuring line drawings or text.

- Resize the EPSF image the same way you resize any other graphic. Note, however, that this EPSF image is unique. When you apply non-uniform scaling to most graphics, the graphic is distorted, but does not otherwise change its appearance. This EPSF image will actually change its appearance to avoid distortion. Specifically, the text will be placed at an optimum rotation angle to fit within the bounding box without distorting. The following examples illustrate what happens to our EPSF image at two different aspect ratios. Compare this to the distortion produced when a non-

Figure 2. Partial Page Resizable Messages

```
%!PS-Adobe-2.0 EPSF-1.2
%%Title: Smart Stamp
%%Creator: Copyright (C) 1993 Herb Weiner. All Rights
Reserved.
%%CreationDate: 07-May-1993
%%DocumentFonts: Times-Roman
%%BoundingBox: 0 0 100 100
%%EndComments

% Set the font (Times-Roman) and message (PROOF) here
/Times-Roman findfont 100 scalefont setfont
/message (PROOF) def

% Get the size of the bounding box for the message
/dm matrix defaultmatrix def
/cm matrix currentmatrix def
/xs cm 0 get dm 0 get div def
/ys cm 3 get dm 3 get div def
1 xs div 1 ys div scale
/w 100 xs mul def /h 100 ys mul def

% Compute the size and orientation of the message
newpath 0 0 moveto message true charpath pathbbox
/y2 exch def /x2 exch def /y1 exch def /x1 exch def
/ww x2 x1 sub def /hh y2 y1 sub def /k hh ww div def
h w gt {w h div}{h w div} ifelse k lt
{h w gt {w 0 translate 90 rotate /h w /w h def def} if
/s h hh div def s s scale w s div ww sub 2 div 0 translate}
{/k2 k k mul def
/b k h mul k2 w mul sub 1 k2 sub div def
/c w b sub def /a k c mul def /d h a sub def
/s c c mul d d mul add sqrt ww div def
b 0 translate d c atan rotate s s scale} ifelse
x1 neg y1 neg translate

% Display an outline of the message
3 s div setlinewidth 1 setgray
newpath 0 0 moveto message true charpath stroke
1 s div setlinewidth 0 setgray
newpath 0 0 moveto message true charpath stroke
```

uniform scale is applied to a graphic created using Adobe Illustrator: