

# FOLLOW THE

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CLIPPING PATHS...THOSE WHO HAVE TRAVELLED THEM KNOW THAT THEY ARE FULL OF booby traps. They can take far too long to create, or print looking like clumsy cutouts, or worse yet, take forever to print — or not print at all (I bet you have seen the “PostScript error: limitcheck; offending command: stroke” message a few times in your life). PostScript Level 3 devices handle paths better than Level 1 or 2, but still, if created incorrectly, paths can take a lo-o-o-ong time to print.

Although prepress technicians know all about paths, the rest of the digital graphics world could save themselves a lot of stress if they knew where to make them, what tools to use, and how to save them to get high quality, faster, error-free output.

## PHOTOSHOP VS. ILLUSTRATOR

Let's start with *where* to make paths, and let's take the oft-used trio of *Illustrator*, *Photoshop* and *QuarkXPress*. I know that most people are used to doing clipping paths in *Photoshop*, but think about the possibilities that *Illustrator* offers.

If you happen to be designing a poster, an ad or a flyer which includes not only text, but also drawing elements and images you have to create, working in *Illustrator* until you are ready to do a final layout in *Quark* may save you a lot of time.

So what can *Illustrator* do for me that a combination of *Photoshop* and *Quark* cannot?

First of all, you can edit text, place bitmap images, draw and mask — all in *one* program.

*Illustrator* will display the final masking in relation to the rest of the page layout — a major plus in design — and, if you place TIFF images (rather than EPS), viewing and zooming possibilities are just as good as in *Photoshop*. And yes, this will increase the *Illustrator* file size.

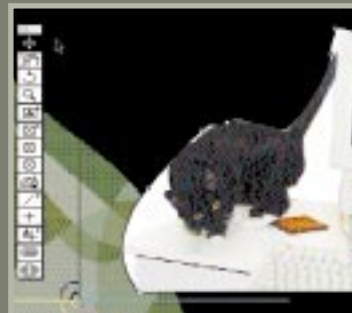
There is another bonus to designing in *Illustrator*: it is much easier to create a good PDF file from *Illustrator* than it is from *Quark*.



Preview from Adobe Illustrator. You can see and edit the path in relation to the rest of document.



Preview from Photoshop. Great, but try to clip a black cat out of a black background without seeing the whole image!



Preview from QuarkXPress 4. It was so difficult to draw a proper path that I didn't even finish it.



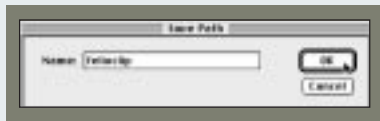
# RIGHT PATHS

## WHAT'S THE PATH CONNECTION?

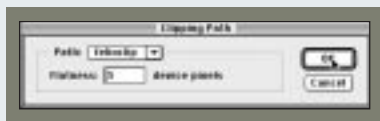
Once the job is approved and you're ready to output — whether to a desktop printer, imagesetter or digital press — there is just one important thing to remember: your document will likely be printed from *Quark*, and bitmap images don't like to be linked to *Quark* files via an *Illustrator* file.

The following ten-minute routine (and what's ten minutes compared to hours saved during the prepress process?) will save you service bureau charges, and assure problem-less printing:

- strip (delete) all photographs from your *Illustrator* layout and save the *Illustrator* file as EPS
- take the paths used for masking in *Illustrator* back to the original photographs in *Photoshop*. Either Copy and Paste>As Paths, or hold the Command key and drag the paths from *Illustrator* to *Photoshop*
- in the *Photoshop* Path Palette:
  1. Save Path



2. Make Clipping Path



And this takes us to *how* do I save clipping paths? And what lies beneath the mystery of flatness?

## WHY CURVES ARE SQUARE

First you must realize that laser dots (or spots) are really non-variable squares. If the square is a building block of a curve, this curve will be drawn with a lot of straight lines. Flatness is the number of pixels (or inches, or any other unit of distance) by which the printed line can deviate from the original — or, how

many straight lines are required to approximate the curve. Another way to say it is, how many pixels is the shortest straight line?

Flatness is dynamically linked to the output device. A flatness of one pixel on a 600 dpi laser printer will result in a maximum deviation of 1/600", meaning that the shortest straight line segment will be built from one laser dot.

That same one pixel flatness on a 2400 dpi imagesetter will result in a maximum deviation of 1/2400", and the shortest straight line segment will be built with one laser dot.

If you are printing to a 600 dpi desktop printer, using every single dot available is a good idea, but if you are printing to an imagesetter at 2400 or 3600 dpi, you don't need that degree of accuracy. And I can tell you neither does your prepress ripper.

If we use a flatness setting of six pixels for a 2400 dpi imagesetter, the maximum deviation will be 1/400" and the shortest straight line will be built from six laser dots.

A path set with a flatness of six on a 2400 dpi imagesetter will rip in about a third of the time compared to a flatness of one, and the quality is indistinguishable. Why? Because to the human eye, the difference in the curve is indistinguishable.

You should ask your prepress shop how high you can go on a job. A flatness setting of as much as 30 may be fine for certain jobs.

But better safe than sorry: if you can't get an answer, set your flatness to no less than three for high resolution printing. If you leave the Flatness box empty, *Photoshop* will use the printer's default settings (usually .1 pixel) which is far too small for high resolution printing, resulting in long print times and possible PostScript errors.

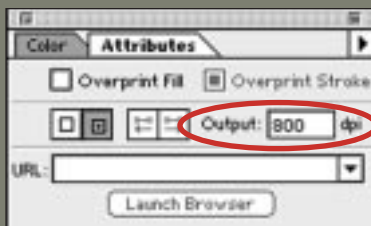
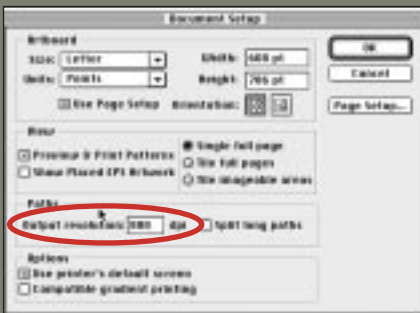
2400 DPI imagesetter  
Flatness: 3  
Maximum Deviation: 1/800"

2400 DPI imagesetter  
Flatness: 6  
Maximum Deviation: 1/400"

2400 DPI imagesetter  
Flatness: 100  
Maximum Deviation: 1/24"

## ADVANTAGES OF VECTORS

*Illustrator* is a vector program, so of course control for path flatness is there. You can find it in Document Set Up, and it's called Output Resolution.



Actually, the idea in *Illustrator* is better than *Photoshop* because the setting actually specifies the deviation, regardless of what type of device you print on. A default setting of 800 dpi means that the line can deviate 1/800".

You can also use Riders Plug-In, an optional plug-in included with *Illustrator* (to activate it, move it to the Plug-Ins folder) but it is

good only for global defaults. Since you can have only one Rider setting at the time, it affects all *Illustrator* files.

However, you can also change the output resolution per object using the Attributes palette from the Window menu.

## NOW JUST SAVE ... PROPERLY

Time to go back to our project. All that's left to do is Save the Image as EPS (only EPS supports true transparent background and clipping paths) and put the layout together in *Quark*. If you use the measurement palette for positioning rather than eyeballing, it should be a breeze.

Now let's clarify *which* tool is best for drawing paths.

Whether you work in *Photoshop* or *Illustrator*, the best tool to use to create a clipping path is the Pen tool: it is the only tool which allows you to create a finished product. If you are an owner of *Photoshop 5*, however, you can use the Magnetic Pen, or Magnetic Lasso. But these tools are good only if the shape you want to clip out has a color contrasting with its background. And even if that's the case, you will still need to adjust the path manually. Magic Wand (the most inaccurate of *Photoshop's* tools!) and all other selection tools create flashing marquees which need to be converted to vector paths.

And here is another booby trap: when you make a path out of a selection, you get a dialogue box with tolerance settings. Oh, no! Lower is not better.

Pixels are square, so if you set a tolerance for the al-

lowed minimum of .5 pixels, the line will follow the shape of square pixels. This will produce lines that are jagged, and often too complex to print.

If you must create a vector path from a marquee selec-



Tolerance: 0.5 pixel

The vector path follows the shape of the square pixels and produces a path which is jagged and sometimes even too complex to print.



Tolerance: 2 pixels

The path is much smoother and has fewer points.

tion, create a path with higher tolerance (two or more pixels) and edit it manually.

Which brings me to another subject: how to use Bézier pen properly...but let's save that for another time. \*

## GLOSSARY

**EPS (Encapsulated PostScript):** a file format used to transfer PostScript image information from one program to another.

**PostScript:** a page description language capable of describing vector and bitmap images. Commercial standard for printing.

**Paths:** vector based, continuous lines which have to be translated using PostScript RIPs (Raster Image Processors) into printable, square laser spots (dots).

**Path Flatness:** the distance by which the line printed with square laser dots can deviate from the original continuous curve.

IF YOU EXPERIENCE PROBLEMS WITH YOUR FILE OUTPUT, OR IF YOUR MAC CRASHES ALL THE TIME AND YOU DON'T EVEN KNOW WHO DOCTOR NORTON IS, OR IF YOU NEED PROFESSIONAL TRAINING IN DIGITAL GRAPHICS, E-MAIL LIDKA AT STUDIO\_L@ISTAR.CA, OR VISIT STUDIO L'S WEBSITE AT [HTTP://HOME.ISTAR.CA/~STUDIO\\_L](http://home.istar.ca/~studio_l).