

BY DAVID KING

# Rules OF THE Game



**Editor's note:** This article is written with the intention of sharing the information with the clients of print providers — agencies, designers and anyone supplying you with graphic files for large-format print output. Please feel free to photocopy the following for their benefit and yours.

Establishing file preparation rules early in the game is of huge importance. I recently sat in on a client meeting where three vice presidents of a large company complained that nothing that had been produced for them over the last six months was consistent.

Unfortunately, I was one of the “inconsistent” vendors they referred to, so I said,

“Show me what you *like* of all your products,” and they produced a travel mug and *one* of the two banners we’d produced for them. Apparently, the banners, with similar designs, had a color difference.

It turns out the first banner, the one they did *not* like, was correct to the Pantone colors they originally called for, and the second banner matched their travel mug.

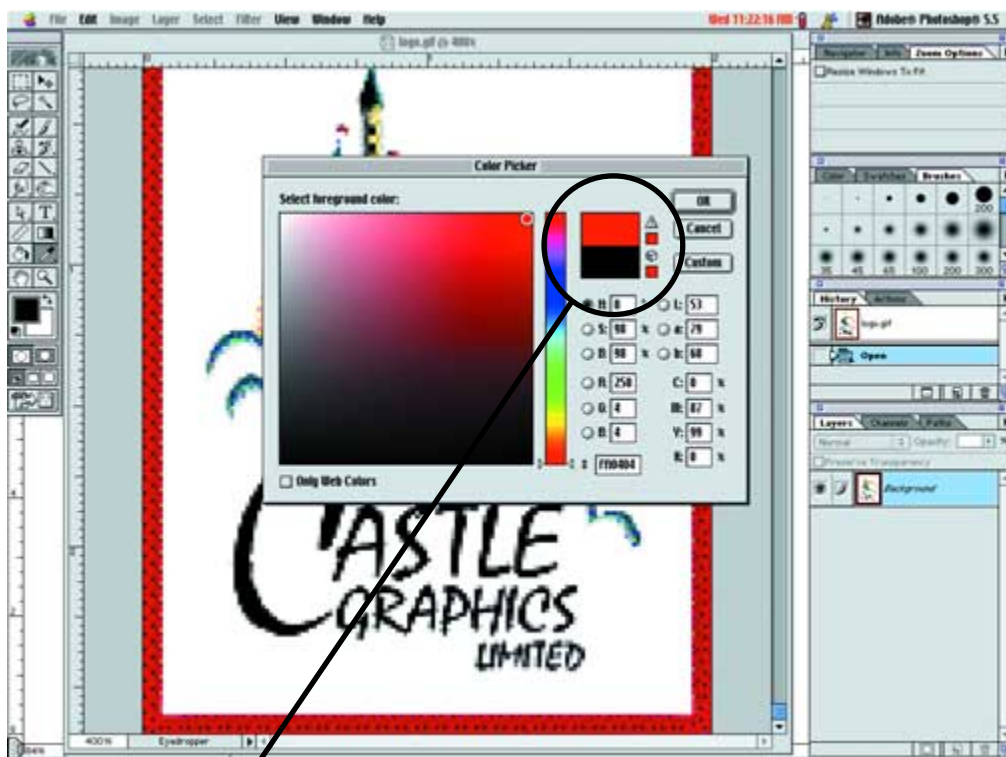
So I asked the client, “What PMS color do you *want*?” He said, “PMS 247c,” so I said, “Well, this banner is PMS 247c, but you say you don’t like it. You like *this* banner, with PMS 267c, so you have gone from pink to purple.”

At this point I had to explain that they had apparently run their first job on the coffee cup (with incorrect colors), and from that day forward they had been giving vendors a file based on that cup, with the PMS 247c color in it — even though they *really* wanted PMS 267c.

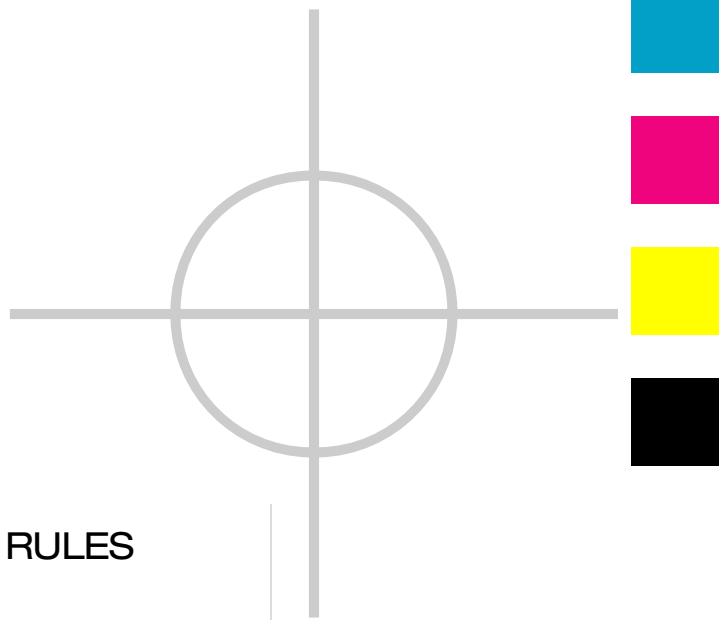
In addition, the color they picked and the color they ended up with are difficult to print using the four-color (CMYK) process printing method (offset or digital).

I then explained that, because they had taken a perfect image from Adobe Illustrator and printed it on a coffee cup (followed by a \$1,200 photo shoot), and then paid for a \$250 drum scan of the mug photo — what they *now* had was a beautiful photo of a very low-resolution, color-incorrect, dead-image coffee cup. Boy, did that hurt!

I think at this point they had spent over \$15,000 and six months on a project, only to find out that it was all for naught!



Watch out for this color choice. If you see this warning in Photoshop, it means that you can't print this color. When the service bureau prints this color it will be much darker.



The point is that it seems like I give this speech each week to people, *after* they had spent their budget trying to get what they want, but *not* understanding that the rules must be established *up front* before the process can have checks and balances.

This is also the point at which, you, the printer, let the designer know exactly what it is you need to effectively print their job.

You need to have a set of *rules* for your company. If you are the designer for the company, then you need to make up the rules and document them for the whole world to see.

We take the company's logo and make it correct, then we take the fonts and all colors and put them in a document that is burned to CD along with all the company's artwork. We keep a copy in our 800-lb., fire-proof safe. We also send copies to everyone who needs them for their records.

Once this system is in place, if a coffee cup company delivers 10,000 coffee cups with the incorrect color, then we can send them back and make them do the job over until they get it right. Without the rules in place, you just pay and pay.

Okay, now that I have your attention, I am going to take you through the *hard and fast* rules for creating, scanning, and laying out files for large-format graphics.

The rules can apply to small format also, but with the large format world, we see every little mistake in the file, because the file is now life size. Sit back and read carefully, this information *will save your business!*

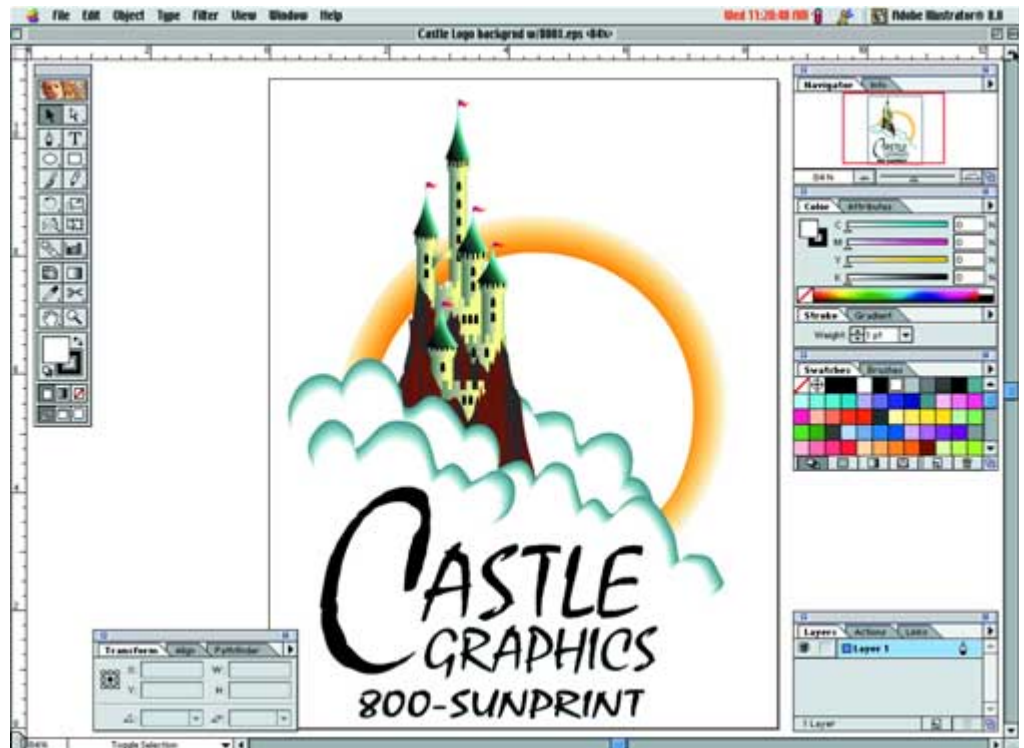
## GOLDEN RULES

### Application

Before we take you through the whole process of preparing your files for output, you need to make sure that you understand the application and viewing distance of the graphics you are about to have us output. If these graphics are being used indoors, then just about any product we sell will work.

You will also need to consider the life expectancy, viewing application (poster, backlit, floor graphics, banner, wall mural, vehicle graphics, etc.), and the physical application of this graphic.

If this graphic is to be used outside, the

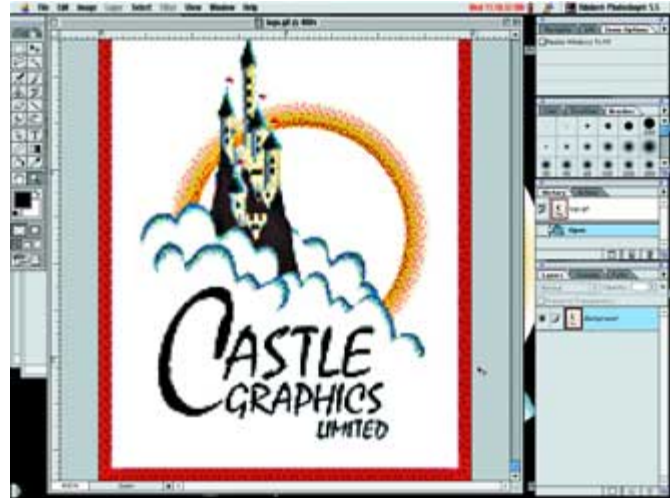


If you can, you should always work with Vector-based graphics. If properly created, they can be enlarged to virtually any size with excellent results. Choices are more limited. Again the

# File Prep



This is an Adobe Illustrator file placed into Photoshop at 2" x 3" 72 dpi. The file looks fine in small scale, and, for most applications a low-res file works great.



The same file (taken from Adobe Illustrator and placed into Photoshop at 2" x 3" 72 dpi, and then enlarged to 20 times its original size), is now highly bitmapped and has very poor resolution. It is no longer good for large-format jobs.



same questions need to be asked. Before you begin your project it is advisable to discuss the application to make sure the products you have chosen will be the best for your project.

### Size and Scaling

The first and most important step is to determine the size of your final large format graphic. You must know the size of the graphic to proceed with the rest of the steps in this document. Once the size has

been determined, you need to decide the scale you will be working in.

If your document is less than or equal to 48" x 48" you should work in a one-to-one scale. When the document is larger than 48" x 48", but smaller than 16' x 16' you should consider using a 1/4"=1' scale, and for all graphics that are larger than 16' (higher or longer) you should work with a 1"=1' scale.

We recommend that all vehicle graphics be done in a 1/12 scale (one inch = one

FINAL SIZE OF IMAGE	÷	SIZE OF ORIGINAL IMAGE	X	FINAL DPI	=	SCANNING DPI
48" x 96" Banner	÷	2.5" x 5" Reflective (cropped from 4" x 6")	x	75	=	1440
30" x 40" Poster	÷	.75" x 1" Slide (35mm)	x	100	=	4000
96" x 288" (8' x 24') Truck	÷	1.6" x 5" Chrome (cropped from 4" x 5")	x	50	=	2880

\* For best results, you should oil-mount your transparent film (this does not apply to reflective photos) and drum scan your image. If you do not have the resources to provide the necessary files, you can scan the images at 72 dpi and use them in your document as FPO (For Position Only) and scan your images and replace the FPOs. If Castle scans your images, please allow 2 days for this service.

foot) so a 24' straight truck would be 24" in your document.

Keep in mind that if you are using a scale you need to apply this scale to all your files that make up the graphic. You will also need to indicate this sizing upon giving your file to us for output.

### Scanning: Resolution

Scanning is the most difficult part of each job because the images you need to scan can sometimes become very large digitally (hundreds of megabytes) and difficult to handle.

The most common types of images are 35mm (slides), 2.25" chrome, 4" x 5" chrome, 8" x 10" chrome and reflective art (sizes vary).

The rule you need to remember is that the size of the actual image at *final size* is what you need to be concerned with, not the actual piece of film.

For example: You have a 4" x 5" chrome to scan and put on the side of a truck, but the customer wants only a small part of the actual image (only 2" x 3"). This means you will need to do your calculations based on the cropped 2" x 3" image, *not* the 4" x 5" piece of film.

Below is the formula I use for scanning\* images. When we state *Scanning DPI* we mean the actual *optical resolution* of the scanner (our drum scanner has an optical resolution of 5200 dpi).

In our banner example, if you take the final image width (48") and divide it by the cropped width of the original image (2.5"), then multiply it by the desired final dpi (75), you get the proper scanning dpi of 1440. The same calculation can also be made using the lengths (96" ÷ 5" x 75 = 1440).

### Colors: CMYK + 4-Color Black

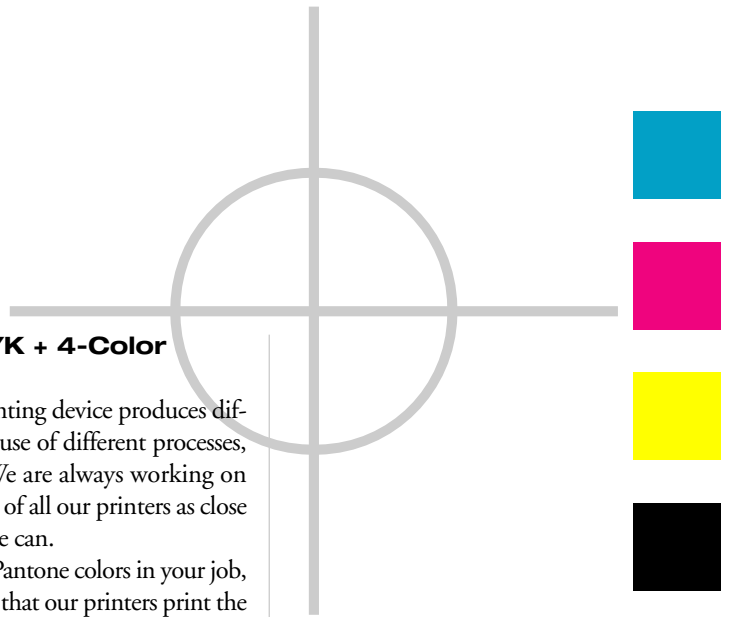
Every digital printing device produces different colors, because of different processes, inks, and RIPs. We are always working on keeping the colors of all our printers as close to each other as we can.

If you are using Pantone colors in your job, you need to know that our printers print the four-color process of the Pantone.

If you do not know what the difference is, you should purchase the *Pantone Process Imaging Guide*. This guide is necessary for all designers who will be working with four-color process (offset and digital).

We will always try to match Pantone colors to our printers, so we ask designers to include the Pantone Number and Pantone Color Chip in the documentation when the job is submitted. There could be a charge for PMS Color Matching so check with your printer/service bureau.

In most cases it is best to convert all your



**\*\* Note:** If we have to make a "type change" to your file, we won't be able to do so if the fonts are converted to outlines.

Too many times we send files to our service bureau to be printed and what we get back is not what we expect. The above file is a good test for you to try on your own computer. Use Adobe Photoshop in RGB mode and create seven boxes. The first three are Red, Green, Blue and the other four are Cyan, Magenta, Yellow and Black.



files (Photoshop) to CMYK. If you convert your Photoshop files to CMYK you will have a better idea as to what your actual files will look like. If you want the best and most rich black please use four-color black in all your programs. Four-color black is the combination of all the colors at 100 percent (Cyan = 100 percent, Magenta = 100 percent, Yellow = 100 percent and Black = 100 percent). This is necessary for all backlit displays and DyeFabs. It will give you a rich, deep black that is absolutely beautiful!

### Fonts

If you are using a vector-based program (Illustrator/FreeHand) you can convert your font to outlines if you do not want to

supply the fonts\*\*. All other software requires the fonts, so please provide the Postscript and/or TrueType fonts.

When providing Postscript fonts please include both the screen font and the printer font. Please know that different manufacturers of fonts use the same names but the actual fonts are different.

### Software: Pixel-Based (Photoshop)

Pixel-based software is software that uses pixels at a resolution to determine the final image quality and size. In all cases, pixel-based software starts with a file size and resolution before any work is done.

Photoshop is a pixel-based application; therefore you must determine the size of the file required and the resolution before you start any work in Photoshop. *Do not put fonts in Photoshop unless you have to!* Fonts can often look bitmapped or jagged in Photoshop and you could be very disappointed in your graphic if you include fonts.

Ideally, fonts should be added in your page layout package (Quark or PageMaker), or with vector-based software package (Illustrator or FreeHand).

In all cases, when you silhouette an image in Photoshop for a clipping path, you must save this as an EPS file, and include the clipping path with a low pixel count. For all other Photoshop files, please save them as a TIFF format. Do not use JPEG, as this format reduces the quality of the image.



Now change your mode to CMYK. You will see the colors change on your screen because this is what should happen. But now look at what colors are created in the CMYK mode. You should see that the CMYK is not what you expect. The Rule is that if you are planning to print using CMYK devices, then design your graphics in CMYK mode.

### Software: Vector-Based (Illustrator/FreeHand)

Vector-based software allows you to

create images that scale to any size with sharp resolution. Vector-based files are typically small in size (most fit on a floppy) and are fast and easy to work with.

The new vector-based software allows you to place pixel-based files in with the vector graphics, but this makes the files more difficult to work with on the output side.

Ideally, pixel-based and vector-based graphics should be assembled in a page-layout package such as Quark or PageMaker. Unless its unavoidable, we would prefer that you do not place Photoshop files into your vector-based files.

### Software: Page Layout (Quark/PageMaker)

Here we use Quark Express for all our layout work and would appreciate all final graphics being laid out in Quark.

Again, you need to make sure you setup the Quark file to the correct size and scale. The color palette in Quark is not what we use for PMS matching, so please use the color palette from Illustrator for all your Pantone colors.

This is done by creating a new file in Illustrator, loading the Pantone colors into your document, creating a small graphic (a 1" x 1" box, for example), filling it with the PMS color of your choice, saving the file as an EPS, and importing it into Quark (usually to the side of your document in the pasteboard).

If you are creating a graphic that will have a bleed, please over bleed the graphic in the Quark document. This helps give us the extra *color* or *image* we need when mounting/installing the print.

### Turn-Around Time

Once you have finished the graphics, place all the files and fonts on a disk

(Jaz, ZIP, Syquest, CD ROM, Bernoulli, etc.), include a color comp of the graphics, Pantone chips or color numbers, your sizes and quantities, and send them to your printer/service bureau.

Provided your files are setup correctly and we have no problems, your graphics should be ready to ship in 48 to 72 hours.

If the files need to be worked on, the typical 48/72 hour turn-around does not start until the graphics have been approved. Some fabric finishing and/or stitching can require three additional days to complete the job.

### Saving Your Files

We will keep all the files for a job for five business days. After the five days the files are deleted.

All workstations are backed up each night but no guarantee is made that the files can be retrieved due to the backup being magnetic media.

If you want a copy of your files please provide the printer/service bureau with a disk (Zip, Jazz, etc.) or have them burn your files to a CD ROM.

If you feel this article will help you, then the next step is to walk to the photocopier and make enough copies for the people at your company. Hand out the copies and watch your profits increase and your deadlines be met over the next six months.

*David King is Director of Operations at Castle Graphics a 3M Scotchprint and Avery Digital Certified Fabricator. David is also a speaker at The B.I.G. Show — Best In Graphics for Digital Graphics magazine. He can be found at [www.castlesunprint.com](http://www.castlesunprint.com).*

DG

