

The Perfect File for Printing

It may sound like a pipe-dream, but it really is possible to get perfect files for output.

BY DAVE KING



David King is director of operations for Massachusetts-based Castle Graphics. He has been in the digital industry for more than 22 years and works with a number of major manufacturers to help develop new and better technologies. In addition to writing for Digital Graphics Magazine, Dave is a frequent speaker at The Sign Business & Digital Graphics Show. He has also produced Inkjet Printing, Laminating and Mounting, an educational video for the Video Classroom series. For more information call 1-800-691-8047.

To understand the perfect file, we need to understand what makes up a perfect file — also, whether we'll be creating those files or our clients will be providing them to us. Here's a suggestion: I'll explain how to make a perfect file, and you give a copy of this article to your clients so that they know how to make a perfect file for you. Sounds good to me. (Let's hope they read it.)

TWO KINDS OF DATA

Every file is broken down into two basic kinds of data — *vector* and *raster*. Vector images are made up of many individual, scalable objects. These objects are defined by mathematical equations rather than pixels, so they always render at high quality. Vector objects consist of lines, curves and shapes with editable attributes such as color, fill and outline. Raster images are made up

of *pixels* in a grid, so I like to refer to these as *bitmap* or *pixel files*. Pixels are picture elements — tiny dots of individual color that make up what is seen on a computer screen. All these tiny dots of color come together to form the images in a pixel file.

A lot of people like to think of these file types (vector/raster) as Illustrator or Photoshop files. The problem with using terms like Photoshop, Quark or EPS (Encapsulated PostScript) to describe files is that it assumes that the person you are talking to understands what the ideal format is for each of these applications/types. But I believe this is the wrong approach.

I'm sure that on occasion you are told (or perhaps tell others) that "an EPS file would be the best for your image." Well, this is both *right* and *wrong*. First off, an EPS file format can be created from either a vector or a pixel file — just open up the data in your favorite program and *Save As* (or *Export As*) an EPS file. Bingo. Instant EPS file.

However, if the file that was saved as an EPS started as a vector file, it will still have attributes of a vector file after it's been saved as an EPS. Conversely, if a pixel file is saved as an EPS, it will still behave as a pixel file and will not show one bit of improvement in scalability.

PROBLEM FILES

I run into this scenario on a regular basis: A client gets a new computer loaded with Photoshop and he suddenly becomes "the company designer." That's like me purchasing a microscope and calling myself a "scientist." So the client grabs his company logo, places it into Photoshop and drops in a few product photos, adds a nice blue background and saves the file as "Poster.EPS".

They leave it at 8.5" x 11" so it will print onto their \$69 desktop inkjet proofing printer. Then they get the sign-off from the



We recently had a van wrap job for a local restaurant. Here's the logo we created as a vector file with Pantone Match colors.

boss (based on the desktop print) and deliver me an EPS file and a few color proofs of a poster job that I'm asked to produce.

The problem is that the client wants 30" x 60" posters for the trade show, and, last time I checked, you cannot scale an 8.5" x 11" image up to 30" x 60" (call me crazy). Trust me, the problem of the scaling is just the cream on top of the problem. Let's review the problems with this file:

Resolution of the file is more than likely going to be at 72-300 ppi in Photoshop. If we could take this 8.5" x 11" file up to 30" x 60" (we would lose something due to the fact that if you bring the 11" to 60", the factor is 545.45 percent, but if you take the 8.5" and multiply this by 545.45 percent you get a graphics that would be 46.3" wide) and we would have a final resolution of 13-55ppi.

The next problem is the company logo: It's a pixel file; plus, it isn't Pantone Matched.

Because the customer was inexperienced working with a service bureau (me), they flattened the file in Photoshop. And to make it much worse, they saved the flattened file on top of the layered file just before sending it.

Finally, the photos brought into the poster were of too low a resolution for the final output — probably lifted from the company Web page, which are generally 72 ppi at about 2" x 3". So when we bump up the Web image to 60", we end up with an unrecognizable blob.

And finally, adding insult to injury, the client needs the graphics for a trade show in three days. After all, I told them I can turn jobs around in 72 hours. Yikes!

RULES FOR PERFECT FILES

Okay, I've made my point about files that are *not* going to work. Here are my rules for



Here's one of the photos we used for the van job that I took using a four mega-pixel digital camera. We brought the image into Photoshop. The next step is to silhouette the images.



The combination of both the vector logos and the silhouetted Photoshop images (saved as an EPS file).

Perfect Files



Here is the layout with vector files and EPS files together. Note that the text lettering was set up as vector files because they will be applied as cut vinyl on the van.



The finished project. Beautiful!

making *perfect* files, specifically *vector*, *pixel*, *PostScript* and *PDF* files.

Vector Files

I believe that vector files are best because they support Pantone Matching, fast color correction, and scalability to just about any size without losing quality. Programs that produce vector files include Adobe Illustrator, FreeHand and Corel Draw. Vector fonts and some data are also generated in programs like InDesign, Quark and PageMaker.

If a printer supports Pantone Color Lookup, it's best to keep Pantone images in vector files as spot colors. *Do not change the name of the color.* For example, when using Pantone 485 Red for the main text in a logo, calling the file "Text & Logo Red" will make the RIP incapable of understanding the color. Remember that spot colors are *not* the same as process colors, so spot colors converted to process will get lost at the Pantone Lookup of the RIP.

If a RIP can't match the Pantone color to the Pantone Lookup Table, then print a Pantone chart on the media to be used on the job, then use a Pantone-to-Process Chart to match the correct color that the printer produces and change the file to match the correct color number on the Pantone chart. This will ensure that all jobs print with the correct Pantone color (that is, if the Pantone color can be printed on that printer).

Many people like to use Illustrator for layout, so they put photos in the Illustrator file and then save an EPS output file. However, if the photos that were placed are not high enough in resolution for the size of the final print job, I'm stuck (unless the client also includes the high-res photos separately on a disk when they submit the job).

Placing photos into Illustrator documents makes the EPS file much larger and more complicated for the RIP to handle.

Pixel Files

Most people think of a pixel (raster) file as being an Adobe Photoshop file. Photoshop can output many different file types, including EPS. The main reason for saving a Photoshop file as an EPS would be to apply a *mask* onto the data image to send the file out with an outline of the image. If a client chooses to take their logo from a nice EPS file and include it into a Photoshop file, it should be created at a high enough resolution for output (ideally 100 ppi at final size).

A hint: When starting a new Photoshop file, be sure to choose a scale that corresponds with the final size of the image. Always assume the largest scale. It's easy to make an image smaller and maintain resolution, but difficult to make one bigger without losing data (and resolution).

When designing a 48' trailer wrap, for example, it's a good idea to choose a scale of 1:12 so that every inch in Photoshop will be

12" on the actual trailer. A trailer would probably work fine at 50-75 ppi at final size, so the file could be 48" x 8" at 600-900 ppi (keep in mind, this would be a large file.)

PostScript Files

All graphics programs output to a PostScript (.PS) file when they print, but when printing to a non-PostScript printer, most programs will convert to that printer's language. All RIP's love PostScript files and know what to do with the data.

The problem with accepting a PostScript file from a client is that if there was something wrong with the image(s) in the original graphic file, the PostScript file cannot be fixed. So, unless the client is very good and knows the output printing device to be used, PostScript files should not be accepted from the client.

PDF Files

PDF (Portable Document Format) files are a great option for direct-to-press files. With vector and PostScript files there may be missing fonts, but with PDF files everything is included in the file, making them great to view and print.

The setup is a little more difficult, because most programs that output PDF files expect them to be printed to an 8.5" x 11" printer. We have a Castle file format for clients who send Adobe Acrobat PDF files for direct import to our print servers.

We have taken files created in Photoshop and laid out in Quark with a file size of 138 MB, output them on a Durst Lambda and compared them with the same file as a full-size PDF that was only 38 MB. The result was sent directly to one of our Onyx servers. The two files were printed and no one could tell the difference!

Needless to say, PDF files are now being created and sent to our server on a regular basis. We create files for full vehicle wraps as PDF's and they also work great. Another nice thing about PDF files (if they are set up correctly) is that the spot colors being called out in the original file will be seen by the RIP and match Pantone colors.

SOME FINAL THOUGHTS

If a client has Pantone colors called out in their files and your RIP has a Pantone Lookup (Pantone Match System), make sure that all files are kept as spot colors in the vector format. On the other hand, pixel files should be saved as TIFF files unless there is a mask in the file, in which case, the file should be saved as an EPS. For final output, take the pixel and vector files into a layout program — like Quark, InDesign or PageMaker — and output to the RIP as a PostScript file. If your clients' logos have been tested on your printers and will show the colors properly, then PDF files are the fastest for output without losing any quality.

I have only touched on a few parts of my rules for creating the perfect file. I left out scanning, ppi vs. dpi — ppi input compared with the printer's dpi output — and many other good things to know. But never fear, just go to my Web site and find the document called *Castle Preparation Guide* and this will fill in the blanks. Go to www.castle-graphics.net for more information.

Okay. Good luck. Be smart with your money. I'll see you on the show floor. **DG**

Go Home With More!

The Sign Business & Digital Graphics Show

May 5-7, 05 Ft. Worth, TX Ft. Worth Convention Center	June 2-4, 05 Columbus, OH Greater Columbus Convention Center	July 28-30, 05 Long Beach, CA Long Beach Convention & Entertainment Center	Aug. 25-27, 05 Charlotte, NC Charlotte Convention Center
--------------------------------------------------------------------	---------------------------------------------------------------------------	-----------------------------------------------------------------------------------------	-----------------------------------------------------------------------

You could win \$500! Each day four lucky attendees will be randomly drawn to win prize vouchers worth \$500 good at participating exhibitor booths. In all, \$5000 will be given away at each show. To be eligible to win simply attend the show. That's it. Easy money.

Register now at www.nbmsshows.com

We sure to use source code **6MAX9** to be entered to win an iPod photo.

Prize vouchers are redeemable at any participating exhibiting company during the show and for 30 days after the show closes. Vouchers must be used towards products and services offered by participating exhibiting companies. Cannot be redeemed for cash.

NBM SHOWS www.nbmsshows.com • (800) 660-9841

U.S. POSTAL SERVICE STATEMENT OF DOMESTIC MANAGEMENT AND CIRCULATION (REQUIRED BY 39 U.S.C. 3686)

1. Title of Publication: Digital Graphics. 2. Publication No: 1097-5626. 3. Date of Filing: 9-17-04. 4. Frequency of Issue: Monthly. 5. Number of Issues Published Annually: 12. 6. Annual Subscription Price: \$24. 7. Complete mailing address of known office of publication: 2800 W. Midway Blvd., Broomfield, CO 80020. 8. Complete mailing address of the headquarters or general business offices of the publisher: 2800 W. Midway Blvd., Broomfield, CO 80020. 9. Full names and complete mailing addresses of publisher, editor and managing editor: Publisher: Mary Tohill, 2800 W. Midway Blvd., Broomfield, CO 80020. Editor: Ken Margeritans, 2800 W. Midway Blvd., Broomfield, CO 80020. Assistant Editor: Ethan Elliott, 2800 W. Midway Blvd., Broomfield, CO 80020. 10. Owner: National Business Media Inc., 2800 W. Midway Blvd., Broomfield, CO 80020. Robert H. Winbar Jr., 2800 W. Midway Blvd., Broomfield, CO 80020. Rick Williams, 2800 W. Midway Blvd., Broomfield, CO 80020. 14. Issue Date for Circulation Data Below: May 2004. 15. Extent and nature of circulation: A. Total No. of copies (net press run): 21743. Actual No. of copies of single issue published nearest to filing date: 21316. B. Paid and/or requested circulation: 1. Paid/Requested outside-county mail subscriptions: 15975. 2. Paid in-county subscriptions: 0. 3. Sales through dealers and carriers, street vendors, counter sales, and other Non-USPS paid distribution: 0. 4. Other classes mailed through the USPS: 0. C. Total paid and/or requested circulation: 15975. D. Free distribution by mail: 1. Outside-county: 1025. 2. In-county: 0. 3. Other classes mailed through the USPS: 0. E. Free distribution outside the mail: 0. F. Total free distribution: 1025. G. Total distribution: 20000. H. Copies not distributed: 1316. I. Total: 21316. J. Percent Paid and/or Requested Circulation: 84.8% 17. I certify that the statements made by me above are correct and complete. Mary Tohill, Publisher.