REAL · WORLD

Print Production
with Adobe® Creative Cloud®

INDUSTRIAL-STRENGTH PRODUCTION TECHNIQUES

Tools for designers and production artists

Tips for offset digital printing

Tricks for maximum efficiency

CLAUDIA McCUE

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Keep in mind, too, that if you've rotated an image in Photoshop and then subsequently applied additional scaling or rotation in a page layout, you've transformed it twice. It's not the end of the world, but you may see some slight softening of detail in the finished piece.

Appropriate Image Formats for Print

How you should save your raster images is governed largely by how you intend to use them. Often, you will be placing images into InDesign or Illustrator, so you're limited to the formats supported by those applications. The application may be willing to let you place a wide variety of file formats, but that doesn't necessarily serve as an endorsement of file format wonderfulness. In the olden days, the most commonly used image formats were TIFF and EPS. However, native Photoshop files (PSD) and Photoshop PDF files are much more flexible, and both formats are supported by InDesign and Illustrator. So, there's not much reason to use other formats unless you're handing off your images to users of other applications, such as Microsoft PowerPoint or Word.

> **NOTE** When you receive a JPEG image, it's a good idea to immediately resave it as a PSD or TIFF to avoid further erosion to image content. Repeatedly opening, modifying, and resaving a JPEG can result in compromised quality if aggressive compression is used.

TIFF

If you need to blindly send an image out into the world, TIFF (tagged image file format) is one of the most widely supported image file formats. It's happy being imported into Illustrator, InDesign, Microsoft Word, and even some text editors—almost any application that accepts images. The TIFF image format supports multiple layers as well as RGB and CMYK color spaces, and even allows an image to contain spot-color channels (although some applications, such as Word, do not support such nontraditional contents in a TIFF).

Photoshop EPS

Some equate the acronym EPS (Encapsulated PostScript) with vector artwork, but the *encapsulated* part of the format's name gives a hint about the flexibility of the format. It's a *container* for artwork, and it can transport vector art, raster images, or a combination of raster and vector content. EPS is, as the name implies, PostScript in a bag (see the sidebar, "EPS: Raster or Vector?"). The historic reasons for saving an image as a Photoshop EPS were to preserve

the special function of a PostScript-based vector clipping path used to silhouette an image or to preserve an image set up to image as a duotone. If you're using InDesign and Illustrator, that's no longer necessary.

EPS: Raster or Vector?

It may be a bit confusing that there are raster-based EPSs (saved from an image-editing program such as Photoshop) and vector-based EPSs (saved from a vector drawing program such as Adobe Illustrator or Adobe [formerly Macromedia] FreeHand). The uninitiated sometimes think that saving an image as an EPS magically vectorizes it. Not so. Think of the EPS format as a type of container. The pixels within an EPS are no different from those in their TIFF brethren. They're just contained and presented in a different way.

As applications and RIPs have progressed, you're no longer required to save such images as Photoshop EPS. Pixel for pixel, a Photoshop native PSD is a smaller file than an equivalent EPS and offers support for clipping paths as well as duotone definitions.

This doesn't mean you need to hunt down your legacy Photoshop EPS files and resave them as PSD (unless you're terribly bored). Just know that unless you need to accommodate someone else's requirements, there's no advantage to saving as Photoshop EPS now.

Photoshop Native (PSD)

> **TRANSPARENCY TIP:** Although Illustrator and InDesign accept and correctly handle *opacity* settings in a placed native Photoshop file, they do not correctly handle *blending modes* in a Photoshop file. There are some workarounds for InDesign, detailed in Chapter 12, "InDesign Production Tips."

In ancient times, the native PSD (Photoshop document) format was used solely for working files in Photoshop. Copies of those working files were flattened and saved in TIFF or EPS formats for placement in a page-layout program. While PageMaker allowed placement of native Photoshop files (yes, really—although it did not honor transparency), QuarkXPress required TIFF or EPS instead. Old habits die hard, and TIFF and EPS have long been the standard of the industry. Not that there's anything truly wrong with that.

However, Illustrator and InDesign can take advantage of the layers and transparency in Photoshop native files, eliminating the need to go back through two generations of an image to make corrections to an original file. Today,

there's no need to maintain two separate images: the working image and the finished file are now the same file.

Photoshop PDF

A Photoshop PDF (Portable Document Format) contains the same pixels as a garden-variety PSD, but those pixels are encased in a PDF wrapper—it's like the chocolate-covered cherry of file formats. A Photoshop PDF comes in handy on special occasions, because it can contain vector and type elements without rasterizing the vector content, and it allows nondestructive round-trip editing in Photoshop.

A Photoshop EPS can contain vectors and text, but the vector content will be converted to pixels if the file is reopened in Photoshop, losing the crisp vector edge—so you lose the ability to edit text or vector content. A native Photoshop PSD can contain vector components, but page-layout programs rasterize the content. However, Photoshop PDFs preserve vector content when placed in other applications (see **Table 4.1** for a feature comparison of common image formats).

Table 4.1 *Image format features*

Supported Feature	TIFF	EPS	PSD	JPEG	PDF
RGB color space	X	X	X	X	X
CMYK color space	X	X	X	X	X
Grayscale	X	X	X	X	X
ICC profiles	X	X	X	X	X
Clipping paths	X	X	X	X	X
Layers	X	—	X	—	X
Alpha channels	X	—	X	—	X
Spot color channels	X	1	X	—	X
Duotones	—	X	X	—	X
Bitmap (bi-level content)	X	X	X	—	X
Vector data	—	2	3	—	X
Transparency	X	—	X	—	X

[1] If saved as DCS 2.0 (a variant of the EPS format)
[2] EPSs cannot be reopened in Photoshop with vector content intact
[3] Page-layout applications rasterize vector content in PSDs

Moving to Native PSD and PDF

Is there any compelling reason to continue using old-fashioned TIFFs and EPSs? It may seem adventurous to use such new-fangled files, but workflow is changing. The demarcation between photo-compositing and page layout is blurring, and designers demand more power and flexibility from software. RIPs are more robust than ever, networks are faster, and hard drives are huge. It's still important to know the imaging challenges posed by using native files (such as transparency), and it's wise to communicate with your printer before you embark on the all-native path. You're still at the mercy of the equipment and processes used by the printer, and if they're lagging a bit behind the latest software and hardware developments, you may be limited by their capabilities.

Bitmap Images

Also called "line art images," bitmap images contain only black and white pixels, with no intermediate shades of gray. If you need to scan a signature to add to an editorial page or scan a pen and ink sketch, a bitmap scan can provide a sharp, clean image. Because of the compact nature of bitmap scans, they can be very high resolution (usually 600–1200 ppi) but still produce small file sizes (**Figure 4.5**).

Figure 4.5 *This 1200 ppi bitmap scan prints nearly as sharply as vector art. It weighs in at less than 1 MB; a grayscale image of this size and resolution would be nearly 10 MB. Magnified to 300 percent, it may look a bit rough, but at 100 percent it's crisp and clean.*

Special Case: Screen Captures

If you're creating software documentation for print, or you want to show an image of a Web page in your project, you may need to include screen captures of software interface components such as menus or panels in your page layouts. Screen captures are easy to make using a system utility or dedicated screen-capture software, but they require some special handling to print clearly. When they're part of software documentation or instructional materials, it's important that the details are as sharply rendered as possible.

You should understand this about screen captures: Whether you take them by using your system's built-in screen-capture functionality or a third-party screen-capture application, you are merely intercepting *information* that eventually becomes pixels on your monitor. Regardless of your current monitor resolution, there is a one-to-one relationship between the fixed number of pixels that an application (and your system) uses to render panels and menus and the number of pixels you see on your screen, even if you use a zoom utility. Of course, the size of the overall image you see is a function of your current monitor resolution, but the *pixel dimensions* of panels, menus, and tools will be identical, regardless of resolution. (**Figure 4.6**)

An application panel that measures 244 pixels by 117 pixels appears larger when your screen resolution is set to 800 by 600, and it's almost unreadably small when your monitor is set to 1920 by 1200. However, the panel is made of exactly the same number of pixels in both instances. So it doesn't matter what resolution your monitor is using, or how large the panels may appear onscreen, or whether you use a utility to zoom in. The captured image of a panel or menu will be the same in terms of pixel dimensions, regardless of the monitor resolution setting, and the resulting image will be 72 ppi.

TIP Do an experiment: In the software of your choice, open a panel and position it in the middle of the screen. Take screen shots at two different resolutions. Make a loose selection of the panel in one image, copy it, and place it into the other image. You'll see that they're identical in pixel count. The overall images will be different sizes because of the different monitor resolutions, but the number of pixels used by interface components such as panels, menus, and tools will be identical.
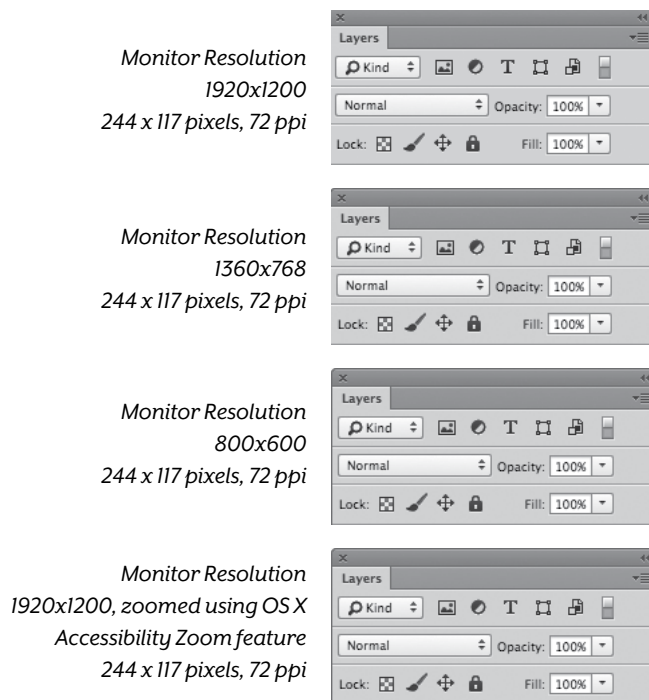
Monitor Resolution
1920x1200
244 x 117 pixels, 72 ppi

Monitor Resolution
1360x768
244 x 117 pixels, 72 ppi

Monitor Resolution
800x600
244 x 117 pixels, 72 ppi

Monitor Resolution
1920x1200, zoomed using OS X
Accessibility Zoom feature
244 x 117 pixels, 72 ppi

Figure 4.6 *The resolution setting of your monitor has no effect on the number of pixels used by panels and menus. Although this panel was captured at three different monitor resolutions, the three captures are identical, each consisting of exactly the same number of pixels.*

Since it's been drilled into you that 300 ppi is the Holy Grail of image reso-
lution, it's tempting to try to improve screen captures by increasing the
resolution. Unfortunately, this usually makes them look worse by softening
small details during interpolation.

If you plan to use a screen capture at 100 percent enlargement, just leave it
at 72 ppi (go ahead and freak out). Yes, the print service provider's prepress
department will raise a flag, but the examples below show why screen cap-
tures are not improved by increasing their resolution.

As you can see in **Figure 4.7**, the original 72 ppi screen capture seems a bit
coarse, but it's readable. Increasing the resolution to 300 ppi in Photoshop may
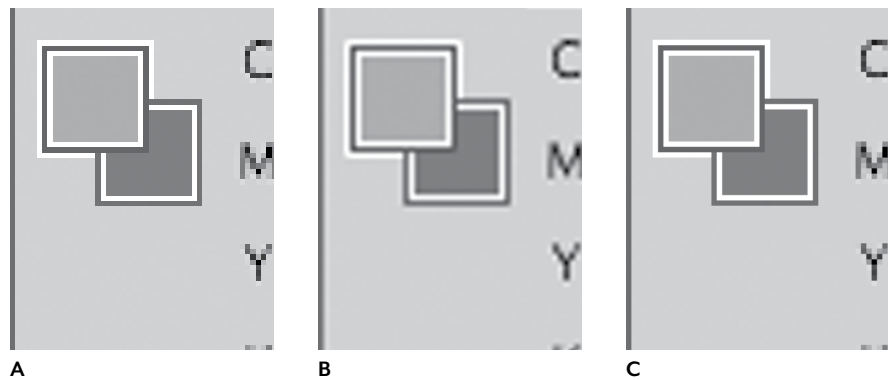sound like a good idea, but the interpolation will soften detail in the image.

A   B   C

Figure 4.7 *Image A is the original 72
ppi screen shot. Image B is the result of
increasing the resolution to 300 ppi,
using the default Bicubic method: Note
blurry text and softened edges. Image C
is the result of increasing the resolution
to 288 ppi, using Nearest Neighbor.*