

Color in Technical Documents for Paper, Web, and PDF

Ken Jackson and Sonya Keene

Traditionally, technical documents have been produced in black and white because the cost of color reproduction on paper is high. With new delivery options of the Web and PDF, color is suddenly available at no cost online. And new digital printers make color on paper increasingly affordable.

When opportunity knocks, issues tend to follow. Writers will find that using color is a learning experience. There is a new alphabet soup: RGB, CMYK, GIF, JPEG, CSS. There are new buzzwords: spot colors, process colors, digital printing. There are new techniques for representing color in Web pages and in PDF documents intended for paper or screen. Our presentation focuses on practical techniques, not graphic design.

COLOR BASICS

Color is the interaction between an object, the light source, and the eye. There are several models for describing a particular color; we describe two of them.

- Red, Green, Blue (RGB) model: Colors are additive. 100% of red, green, and blue results in white light. This is the model for monitors.
- Cyan, Magenta, Yellow, and Black (CMYK) model: Colors are subtractive. 100% of cyan, magenta, and yellow results in black. This is the model for ink on paper.

USING COLOR IN PRINT

It is difficult to accurately predict the printed result from looking at sources on a computer monitor since the monitor uses the RGB model and the printer uses the CMYK model. Some colors within the gamut of one model are impossible to recreate in the other model.

There are two distinct kinds of color print jobs. *Spot color* is a color created by mixing ink before applying it to paper. Typically that color is specified using a standard of ink recipes such as Pantone. Two-color presses are typically used to print spot colors.

Process color is created by printing CMYK inks on the page. The viewer's eye mixes the color to see a wide range of shades as if the ink were mixed. Four-color presses print the CMYK inks to create process colors. Costs are high in short runs but decrease in quantity. Digital printers can produce process colors at lower cost

for short runs, but the output quality is lower than the output of four-color presses.

USING COLOR ON THE SCREEN

Displaying color on the screen is simple and free, but for your readers to see what you expect them to see you must recognize limits to color on a network. You may have over 16 million colors available on your screen, but you can only be sure that your user has 216 of these same colors. See Lynda Weinman's list of browser-safe colors at <ftp://luna.bearnnet.com/pub/lynda/> and (1). The most popular formats for online documents are HTML and PDF.

HTML lets the writer specify background color (and image), text color, font color, and colors for links and table cells. Also, it displays color images in JPEG and GIF formats. Cascading Style Sheets (CSS) organizes the author's control of color in HTML and XML documents. Our presentation shows CSS syntax and examples.

The PDF format displays the same document that you have printed as a PostScript file. So all the color options available in PostScript are translated into screen equivalents. The applications that create PDF files (PDFWriter and Acrobat Distiller) offer control of resolution and compression to optimize the PDF document for print or screen. Our presentation discusses specific PDF options.

REFERENCES

- (1) Weinman, Lynda. *Designing Web Graphics*. New Riders Publishing, 1997.

Ken Jackson, Documentation Manager
Sonya Keene, Senior Technical Writer
Harlequin, Inc.
One Cambridge Center
Cambridge, MA 02142 USA
kenj@harlequin.com
skeene@harlequin.com

Ken Jackson and Sonya Keene each have over a dozen years experience in technical writing. They are the coauthors of *FrameMaker to HTML: Single-Source Solution for Paper and Web*, Addison-Wesley, 1997. They work at Harlequin, a company that produces color management tools and a RIP (Raster Image Processor) used to drive many high-end printing devices.