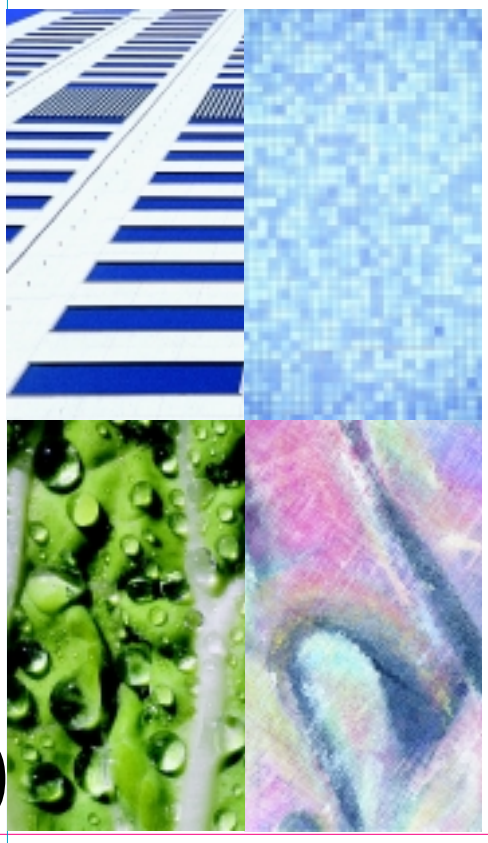
guidelines

digital
prepress



To output your file to any of our printing devices you must provide to us:

1) The Page Layout file!
2) All illustrations and scanned images used in the publication.
3) All fonts used in the page layout file and in illustrations.
4) An accurate laser proof of the **final** version of the publication. If multi-color, a composite proof and a color separated proof.

APPLICATIONS FOR DIGITAL PREPRESS

PAGE LAYOUT APPLICATIONS:

Quark, PageMaker, InDesign, Publisher 2000

VECTOR ART ILLUSTRATION AND EDITING APPLICATIONS:

Freehand, Illustrator, CorelDraw

RASTER ART CREATION AND EDITING APPLICATIONS:

Photoshop, Photopaint, Photo Deluxe

LIMITATIONS AND USES OF WORD PROCESSING PROGRAMS

Programs such as Microsoft Word, PowerPoint, Excel or Word Perfect are not designed for commercial prepress work. These programs can only output pages in composite form to a black and white or color digital printing device. Quality of text, graphics and color is determined by the specific printing device. Word processing programs are great for short-run, black and white publications, short-run color copies, or for setting text to be placed and styled in a page layout application.

In commercial offset printing, a separate printing plate is generated for each color used. It is not possible to print color separations from word processing programs. Files cannot be processed by an imagesetter to produce film for metal plates.

For complex, high quality publications you must use a page layout application like those listed above.

SETTING UP THE FILE IN A PAGE LAYOUT APPLICATION

Documents should be set up at their exact size. Bleed elements should extend 1/8" past the trim size of the page.

Consider folds and panel width when setting up line lengths for columns of type and artwork positions.

If producing a booklet, submit the file as individual pages contained within one document. Pages will be imposed as best suits the press setup required.

If we are going to be scanning pictures for you and placing them in your document, allow space for them in your layout. You can insert an empty picture box for this. Identify the pictures and mark their locations on the laser proof.

Clean up your file before you submit it for publication. Delete any unused text and picture boxes. The pasteboard should be empty. Do not cover items on the publication pages with white or paper filled boxes. Delete them if you do not want them to print. Crop, don't cover up!

ARTWORK AND SCANNING

All image files should be one of the following formats:

For Halftones: Grayscale TIFF, CMYK TIFF, or EPS

For Line Art: Bitmapped TIFF or EPS

Freehand EPS files should be accompanied by their parent file.
Do not place or "nest" a vector EPS file inside another EPS file.

It is not advisable to use an EPS created in Quark.

CONTINUOUS TONE (HALFTONE) SCANNING

Know what size the image will print before you scan, then calculate the optimal scan resolution. Too low a resolution will lack detail and appear jagged, especially if enlarged. Too high a scan resolution will produce unnecessarily large files with no improvement in appearance. If you are not sure what size the final image will be, base your scan resolution on the largest estimated size. Or do a low resolution scan (72 ppi) to represent the image, and when your layout is finalized, redo the scans at the correct resolution.

The other thing you need to know to calculate scan resolution is the halftone screen ruling that will be used to output the image. The most common screen rulings for high quality halftone printing are 133 lpi and 150 lpi. In almost all cases 150 lpi is the best choice.

A good scan resolution for images that will print the same size as the original is 300 ppi. This is two times the screen ruling (150 lpi x 2 = 300 ppi)

Use the following formula to calculate the scan resolution for images that will be enlarged or reduced:

Divide the final image height (x) by the original image height (y).
Multiply the result by the halftone screen ruling (a).
Multiply that answer by two.
The result is the scan resolution (z).

$$\frac{x}{y} \times a \times 2 = z$$

For example, the final image will be 3 inches high.
The original image is 5 inches high.
3÷5=0.6 0.6 x 150=90 90x2=180
The scan resolution is 180 ppi

You will get better looking pictures if you scan color photos in Full Color or RGB mode, even if they will not print in full color. In your image editing program you can save the channel with the best tone range as a Grayscale.

Scan black and white photos in the Grayscale 256 mode.

Use the TIFF file format to save all scanned images. EPS format is also an option but will create a larger than necessary file.

LINE ART SCANNING

Scan line art at the highest resolution your scan software will allow. 600 ppi is the absolute minimum required for smooth line art output. Scan at the final size of the art for best results. Save in the TIFF file format.

PROBLEM ARTWORK

Almost without exception artwork downloaded from the Web is 72 dpi (extremely low resolution). This art is designed to look great on a computer monitor, but prints ragged and fuzzy. Typical file formats for Web art are JPEG (JPG) and GIF. Don't use them for print.

Photographs made with digital cameras are growing in popularity. The image files they produce use JPEG compression so that the file size is small. This form of compression destroys the image for print. If you must use a digital camera choose an option that puts the least number of photos on one roll of film so that the data loss won't be quite as great.

High end prep houses produce excellent digital photography. Before you contract for the work, make sure the images you buy can be reproduced in print.

Some stock art photography purchased on CD is in JPEG format. If you have a choice between Hi Res or Low Res versions choose the Hi Res version. When the physical size of the image is very large and will be reduced for printing, the results are usually pretty good. Also remember that these images will likely be in the RGB color mode, and will need to be converted to CMYK if printing in full color, or Grayscale if printing in one color.

File formats that are typically of poor quality for print are PICT, WMF, DCS and BMP. Print a 600 dpi laser proof. If it looks bad, the printed version will also.

Using printed pictures as originals to scan present a problem. They already have a halftone screen applied to them. When you scan them you apply another screen to the image, resulting in a strange looking pattern called a Moiré. If you must scan a pre-printed image, and if your scan software allows it, apply a blur (or Soften) before you scan. Otherwise apply just enough of a blur in your image editing program to fade the Moiré pattern.

LINKS

A Link is the original file for any image you used in your publication but did not create within that publication. Our computers must be able to locate and refer to the original image file when translating the data to our printers. If the link is not found, there will be errors in the translation; your publication will not print correctly. This is true even though you may have used a "complete copy" of the image file in your publication. Submit editable copies of these files, so that adjustments can be made for trapping, knockouts, etc.

After you have imported an image into the publication, do not rename the link without updating the links in the page layout application.

If high and low resolution images are on the same disk, make sure the links are to the correct images.

FONTS

Postscript and TrueType are the font standards for digital imaging. Watch out for inexpensive font packages. They are not of good quality and will not print correctly. Stick with Postscript and TrueType from reputable vendors.

You must submit a copy of all the screen and printer fonts you use in your publication, including those that are in EPS files that were not converted to curves or paths. Our computers must be able to find these fonts when translating your files.

A Postscript font is composed of at least two files, a screen font and a printer font. For every variation of the font, (bold, italic, etc.) there will be a printer font. All of these files will be located within a Font Suitcase. Submit the entire Font Family (screen and all printer font variations) contained within the Suitcase.

TrueType fonts and variations do not have a printer font associated with them. The printer font is created when the file is sent to the printing device. Copy and submit the entire Font Family.

Style palettes in page layout applications allow you to alter the style or weight of a font (i.e. make it Bold or Italic), and will print as such on a laser printer. However, these commands are ignored by high-end imaging devices like an imagesetter. If your system does not list a file name for the variation you want, you'll need to use a different font which does.

If the service provider is asked to use his fonts you should not expect character spacing and line breaks to be exactly like yours. Fonts with the same name but from different manufacturers will print differently. For example, a different version of "Times" can cause your text to reflow.

COLORS

Base the colors you specify in your publication on the method that will be used to print it. This will be either Four Color Process (CMYK), Spot Color, or a combination of both. In design applications this is usually referred to as the color mode.

CMYK

The four process color inks are Cyan, Magenta, Yellow and Black. An image printed in CMYK will consist of halftone dots configured in a rosette pattern. The inks are translucent, and when applied in varying percentages, can replicate almost any color in the rainbow. If your application warns you that a color mix you choose is out of gamut, then it cannot be reproduced with four color process. Base your color mixes either on a Spot Color (converted to Process), or an ink swatch book which breaks down the percentages of the four process inks used to make a color. Images in the RGB, Index Color, or some other color mode will need to be converted to CMYK mode to print.

If you want colors defined in different applications to match, make sure their CMYK mixtures match. An imported or placed graphic will bring its color definition with it, so it is often a good idea to define color in the illustration program, then style the elements in the page layout program in that color.

Do not trust your monitor for true color. The color you see on your monitor is a mix of Red, Green and Blue (RGB). So no matter what mode you define your colors in, they will not print in the color your monitor displays.

Scanner software interprets the percentages of color in an original and separates the file into CMYK channels. Each channel can be adjusted independently to improve the interpretation. This is called color correction, and for best results, is performed by an experienced technician.

SPOT COLOR

This method uses pre-mixed inks. Ink manufacturers distribute ink swatch books from which colors can be chosen. Colors have names or numbers (i.e. PMS 281; Cool Gray #10).

Choose your Spot Colors from the Pantone Matching System (PMS) color library. All design applications make this color library available in the color palette. Be sure the color mode chosen is Spot Color, and that color names agree across all applications.

The quickest way to check your color naming scheme is to print color separation proofs and allow the color names to print. For Spot Color, you should get only one page for each color used. Four Color Process prints a separate sheet for each of the four process colors.

TRAPPING

Trapping refers to the slight overlap of colors when objects or text touch. Factors such as the type of paper to be used, characteristics of the press, and other considerations will influence the amount of Trapp required. Therefore, it is best to let your printer set Trapp.

LASER PROOFS

Send a black and white laser print. If your publication is in color, submit both a composite laser proof and color separations. This laser should be the final version of your file and at 100% size. If your project is too large to print a 100% proof then write the reduction percentage on the proof.

Use the laser proof to note special folds, perfs, correct backup orientation, anything that is not obvious from the page layout application file.

PREFLIGHT/PACKAGE/HAND OFF

Page layout applications have a utility for running a preflight check on your file before handing it off to a service provider. You will be alerted to problems that need fixing, such as missing links, fonts, etc. Once these problems are resolved the utility can package everything for you (except for Quark's - you have to copy the fonts manually). Print a report and submit this too.

We are able to accept both Macintosh and PC files.

If you are emailing a job, use a compression program such as Stuff-it, PKZip or one that creates a self-extracting archive. This will reduce file size and keep all the components together.

PDF AND POSTSCRIPT FILES

If you have Adobe Acrobat Distiller you can create a PDF (Portable Document Format). This is a cross-platform, cross-application file format that accurately displays and preserves fonts, page layouts, and other graphical elements in a publication. The drawbacks are that color separations are not possible and editing options are limited.

If your application allows it you can create a Postscript file. Like a PDF, all graphics, fonts and page descriptions are embedded in the file. You must have the PPD (Postscript Printer Description) file that your service provider will use to output your file. Editing is impossible so carefully consider this before opting to hand off a Postscript file to your service provider.

GLOSSARY

BITMAPPED OR RASTER GRAPHIC (TIFF, EPS)

Refers to graphics generated by a scan, marking every point as either black, white or another color. Each point for which there is a value is called a pixel. Can be edited only in a paint or photopaint program such as Photoshop, Corel Paint, ColorIt, etc. Resolution is dependent on the scaled size of the file.

VECTOR GRAPHIC (EPS)

A method of creating pictures in a drawing program such as Freehand, Illustrator and CorelDraw! by drawing lines in particular positions. The picture can be enlarged or reduced without loss of sharpness, since the picture is not made up of a fixed number of pixels.

EPS (ENCAPSULATED POSTSCRIPT)

A file type created by a wide variety of programs which contain the vector and bitmap information necessary to print the page successfully. An EPS is not compressible and thus tends to be very large when used to contain bitmap graphics.

An EPS graphic was required to import a bitmap with a clipping path into PageMaker or Quark, however upgrades to both programs now allow a TIFF to be used.

JPEG (JOINT PHOTOGRAPHIC EXPERTS GROUP)
A file format for storing bitmap images using lossy compression. Often used to send files via modem. The file can be compressed to a very small size but blurring and loss of detail occurs.

PDF (PORTABLE DOCUMENT FORMAT)
A file format which represents a document independent of the software, hardware and operating system used to create it. Files can be exchanged easily between platforms and printed to any Postscript printing device. Editing options are limited.

PICT (PICTURE)
This graphic file format was an early one developed for the Macintosh platform. Not recommended.

TIFF (TAGGED IMAGE FILE FORMAT)
A file format used for storing bitmap images. Can store very large images with millions of colors. This is the most common format for exchange of bitmapped files.

WMF (WINDOWS METAFILE)
This format is similar to the PICT format. Not recommended.

DPI (DOTS PER INCH)
Refers to the resolution of a printing output device. The smallest dot produced by the device determines the printer's dpi. Range is from 300 dpi (desktop laser printer) to 3000 dpi (imagesetter).

LPI (LINES PER INCH)
A measure of the resolution of a halftone screen used to reproduce continuous tone images on a printer or press. Most newspaper screens are 85 lpi; good quality magazines use 150 lpi. A 600 dpi laser printer can produce the equivalent of a 100 lpi halftone. When higher resolutions are needed, the file should be output to a 2400 dpi imagesetter.

PPI (PIXELS PER INCH)
Refers to the resolution of the CCD chips in scanners and digital cameras. The higher the PPI, the more detail and enlargement can be had.

RIP (RASTER IMAGE PROCESS)
The interpretation of a page description language, such as Postscript, to a raster format at the resolution and in the format required for a specific output device or imagesetter.

RESOLUTION
A measure of the amount of detail that can be shown in the image produced by a printer or screen.

ZIP
A compression method that does not remove data to achieve compression.