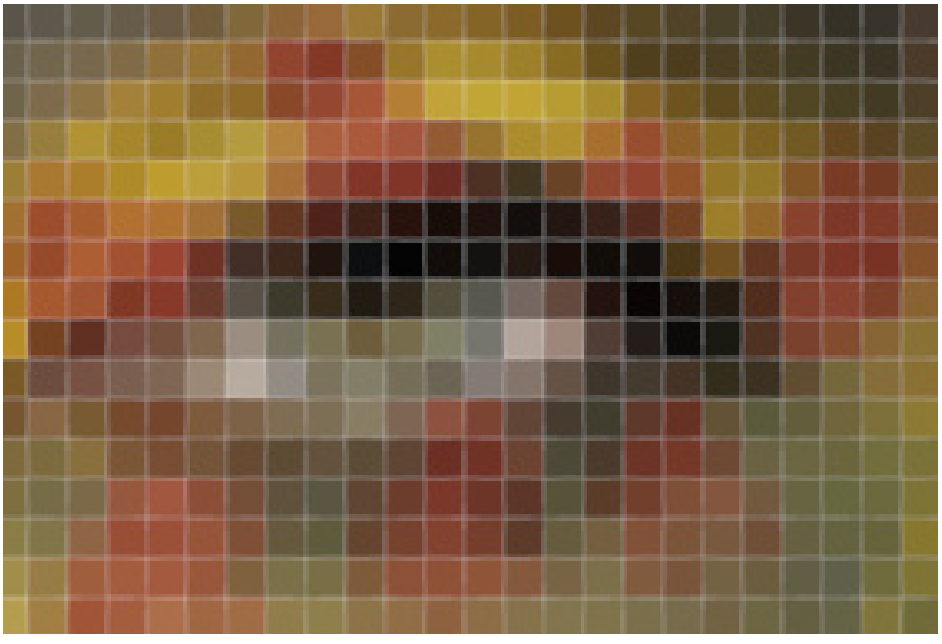
GO! DESIGN NOW!

PRINT
PRODUCTION

By Rick McCawley

Pixels - Dots and Lines Per Inch



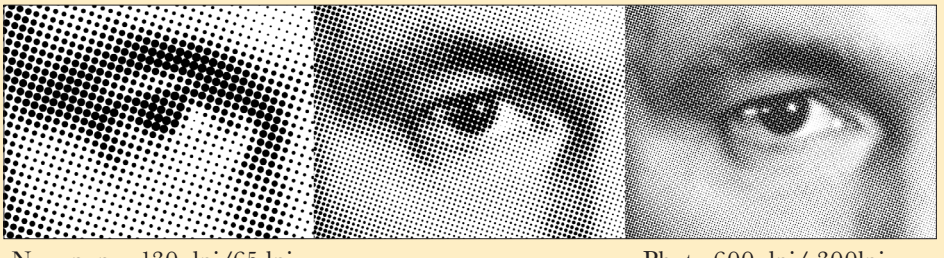
Pixels per inch - PPI

PPI stands for pixels per inch. PPI is a measurement of image resolution that defines the size an image will print. The enlarged photo to the left is an example showing square pixels that make up the image.

Dots per inch - DPI

Is the measure of dots of ink in a one square inch area. The number is the same of ppi instead of pixels on a monitor, this is what we call it once ink hit paper.

Dots Per Inch/ Lines per Inch



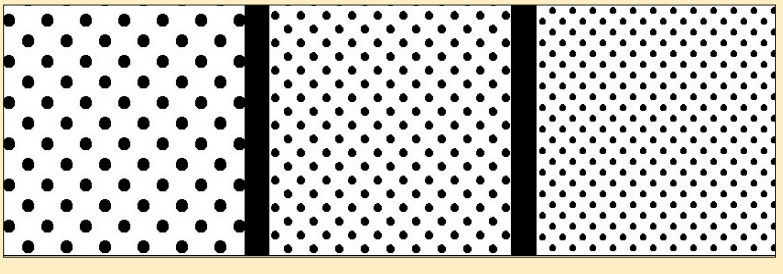
Newspaper 130 dpi/65 lpi

Print 300 dpi/150lpi

Photo 600 dpi/ 300lpi

Lines per inch

Lines per inch is the resolution in offset printing or high volume printing. The more lines that can fit into an inch the more detailed the image. Most press runs use between 65 to 200 LPI depending on the paper.



Setting up Resolution

Printing Resolution	LPI	DPI
Newspaper	65LPI x2	130 DPI
Magazine	150 LPI x2	300 DPI
Art Publication	175 LPI x2	350 DPI

Effective- PPI

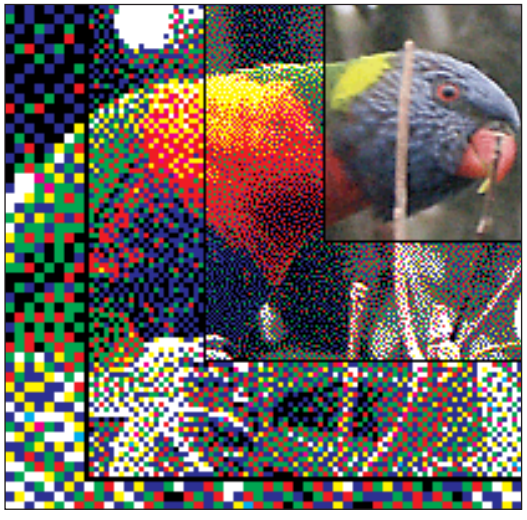
The actual PPI reading tells you the resolution of the image at 100%, whereas the effective ppi tells you the resolution of the image when printed at its current scale percentage. Therefore, if you place an image at 100%, then both readings should be the same. Scale the image down and watch the effective ppi value increase.

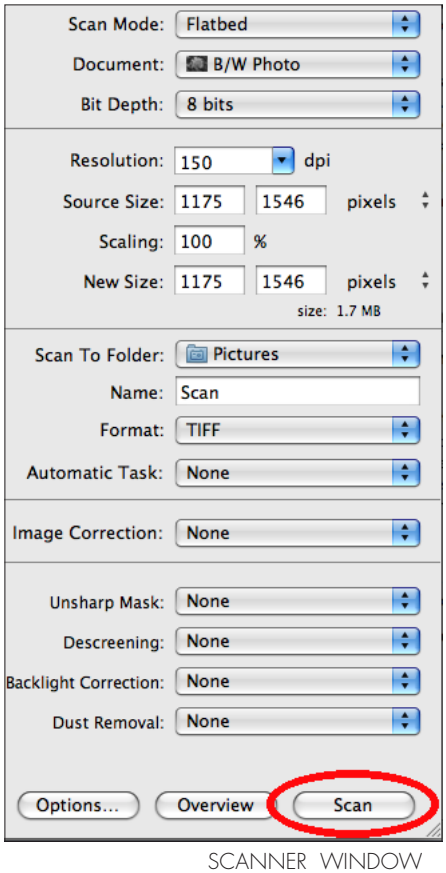
Designed by Debra Guerrini and Erika Hughes

Scanning and Resolution

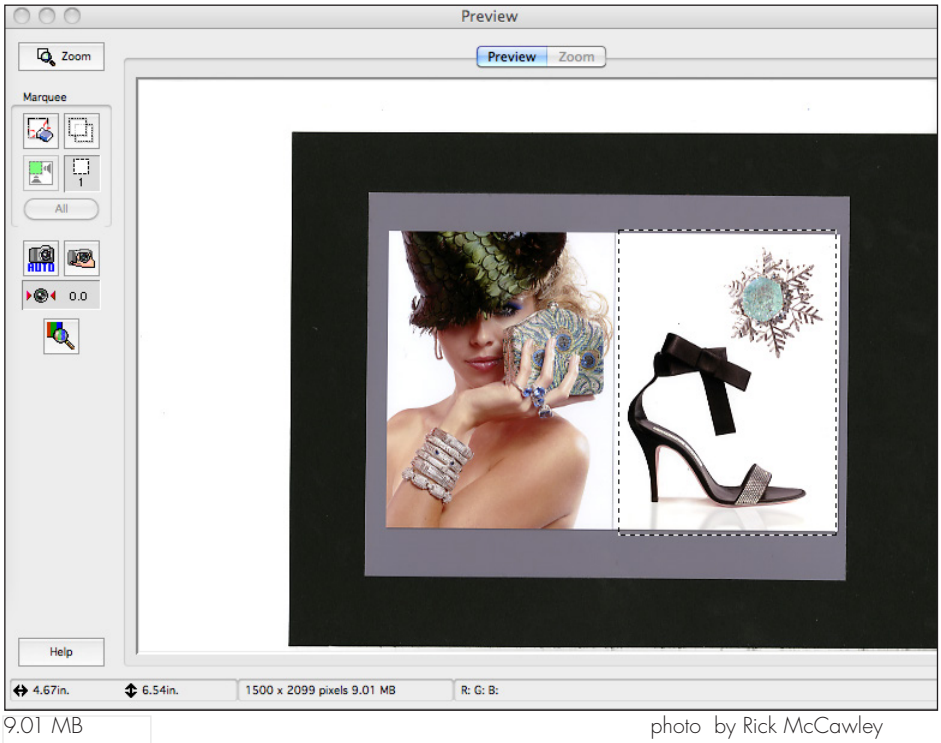
7 inch by 5 inch photo
resolution 300 pixels
megabites 9.01

5 by 7 photo for print 150
Line Per Inch x 2 = 300 Dots
Per Inch. (9.0) mega bites





SCANNER WINDOW



9.01 MB

photo by Rick McCawley

Height x Width = Resolution
8in. x 8in. = 150 lpi x 2 = 300
8in x 8in @ 300 ppi =15.70

How to Scan an image.

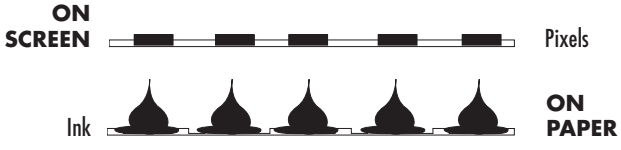
1. What size reproduction is the largest dimension you would want to use for your image.
2. First, place the photograph you would like to scan into the lower right corner of the scanner bed. Follow the orientation indicated by the icons on the template.
3. Click on file - Aquire
4. Select - Source
5. Under profile settings, you will be able to select the resolution and color preferences. For quality photos, remember to choose a resolution of 300 dpi or higher for most print except newspaper.
6. Click Scan.
7. Once it has scanned, you'll find a dashed black line framing your photo, indicating the adjustable cropping area. Use your cursor to grab any corner, and then drag your mouse to adjust the size of the cropping area to fit the photo. Only select the area you would like to scan.
8. : save your photos
9. Select your destination printer
You now have a high-quality print of your scanned original.

Image Adjustment

Why is image adjustment important?

To simulate the color, tones, highlights, and shadows of an RGB image in a CMYK image, and in 4 color printing, adjusting an image with Curves, Levels, and the Unsharp Mask Filter along with color correction, must be used. Image adjustments compensate for dot gain and color casts or unwanted colors in an image. These same strategies can be applied to each color separation individually in order to filter out unwanted color casts or stray color that will end up on a plate or negative.

DOT GAIN WILL DARKEN THE PHOTO AN MAKE IT APPEAR LESS SHARP AS INK SEEPS INTO THE PAPER.

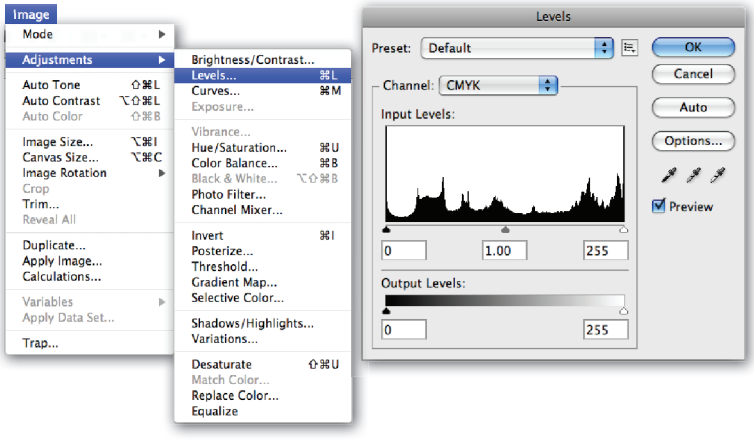


1

Levels

Neutralizes color casts and compensates for dot gain by lightening the image

1. Image>Adjustments>Levels
2. Set the lightest color by selecting the white eyedropper and clicking on the lightest part of the image
3. Set the darkest color by selecting the black eyedropper and clicking on the darkest part of the image
4. Overcompensate for dot gain by dragging the middle slider and dragging to the left, lightening it

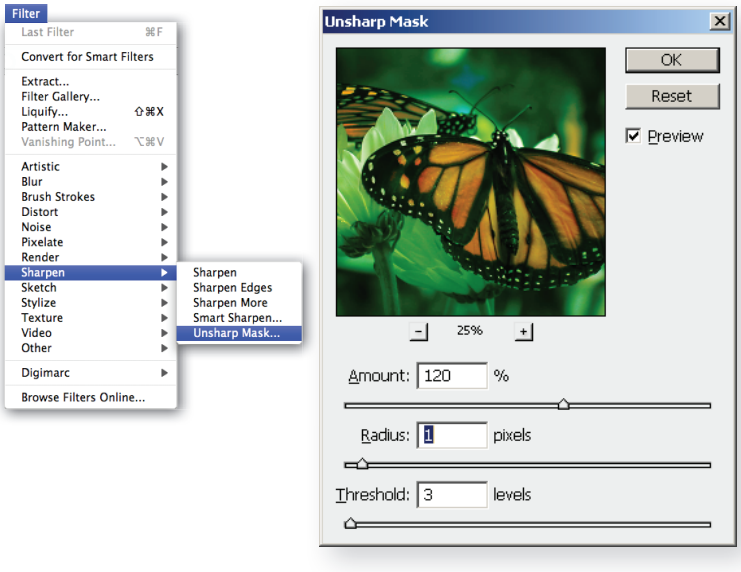


2

Unsharp Mask

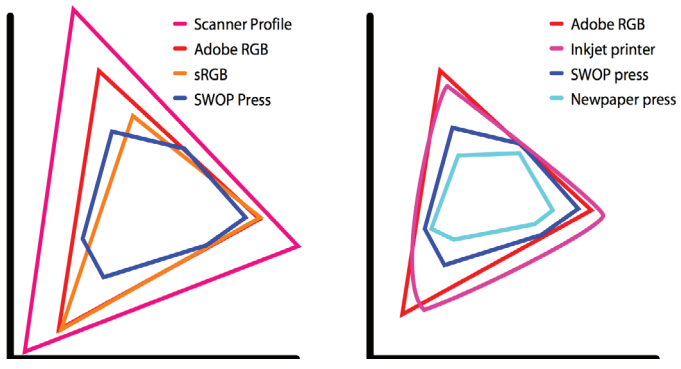
Detects contrast along edges and will sharpen the photo to compensate for dot gain

1. Filter>Sharpen>Unsharp Mask
2. Set Amount: 120, Radius: 1, Threshold: 3, for best settings
3. Review differences by checking/unchecking preview box



What is Color Correction?

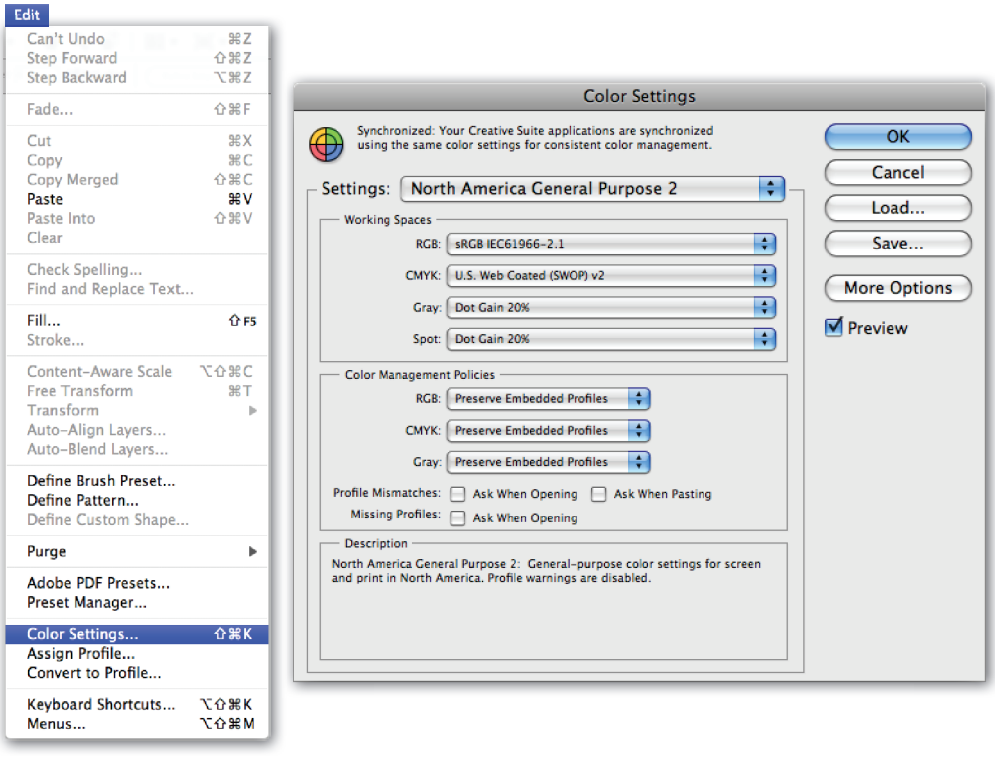
Color correction is the adjustment of the relationship between process colors to achieve desirable colors. This is necessary whenever converting from RGB to CMYK, since a wide range of colors seen on-screen, which can only be mimicked in CMYK, are lost during the conversion. There is more color control in RGB (most filters work in RGB, rather than CMYK), so any correction should be done while working in RGB.



Knowing where the file will be printed before starting any design is highly important, since it will affect what colors you can and cannot use.

3 Color Settings:

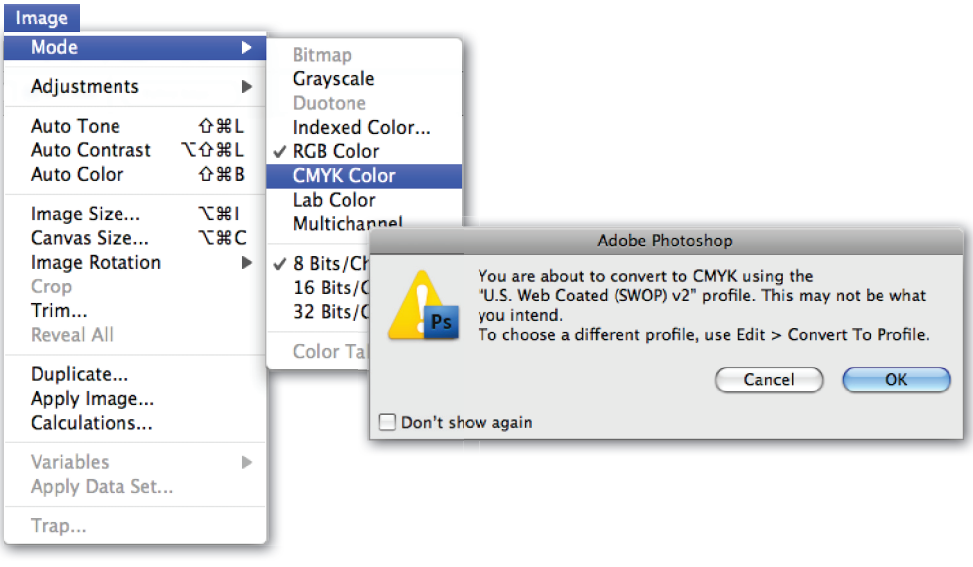
1. Once you have the profile needed for your printer, or if you know what workspace you want to work in, choose Color Settings under the Edit menu
2. Choose the Work Spaces and Color Management Policies that will conform to your printer
3. Save in order to use them again or to apply them to the rest of the creative suite
4. A preview reflecting these settings is found under the View menu as Proof Colors



You can and should change your color settings for all Adobe products within the creative suite color settings box of the Adobe Bridge, which is under the edit menu.

4 Converting RGB>CMYK:

1. Adjust Color Settings and Adjust the image prior to conversion
2. Choose Image>Mode>CMYK Color
3. Click OK if you are content with your current color settings



Converting to CMYK loses a wide ranges of colors. Be sure to convert only for commercial printing, since many home printers can successfully reproduce some RGB colors lost in CMYK.

page designed by Phillip E. Hardy

File Types

TIFF Tagged Image File Format. Tiff has a loss-less compression known as LZW that saves approximately half of a files size without loss of quality. Alpha channels are saved also.

EPS Encapsulated Postscript, used in pre-press for color separated images. Contains calibration compensation information, and supports both raster and vector data.

PSD Photo Shop Document, the native Photoshop file format it uses loss-less compression and retains layers, effects, type, and alpha channels, as editable upon reopening.

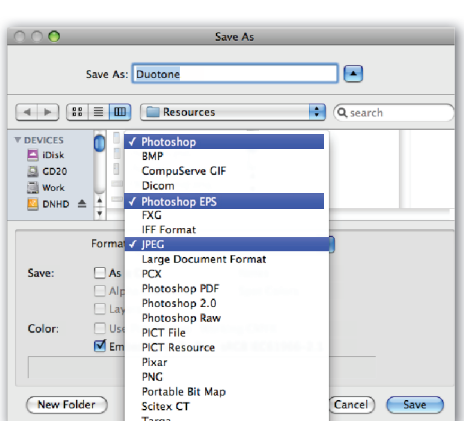
JPG Joint Photographic Experts Group. This is the most popular image format on the web because of its great file size compression as much as 100:1. It is a lossy compression method (you lose quality).

BEST FOR PRINT

ILLUSTRATOR, CLIPPING PATHS, AND DUOTONES

STANDARD, NOT USED FOR ALL PRINT

USED FOR THE WEB



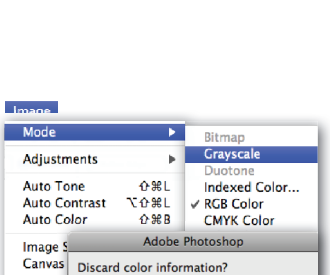
Duotones/Monotones/Tritones/Quadtones

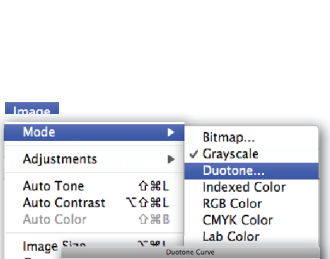
What are Duotones?

Black and white images reproduced using two halftone negatives, which represent the tones of the image.
Monotones use one halftone negative, tritones three, and so on.

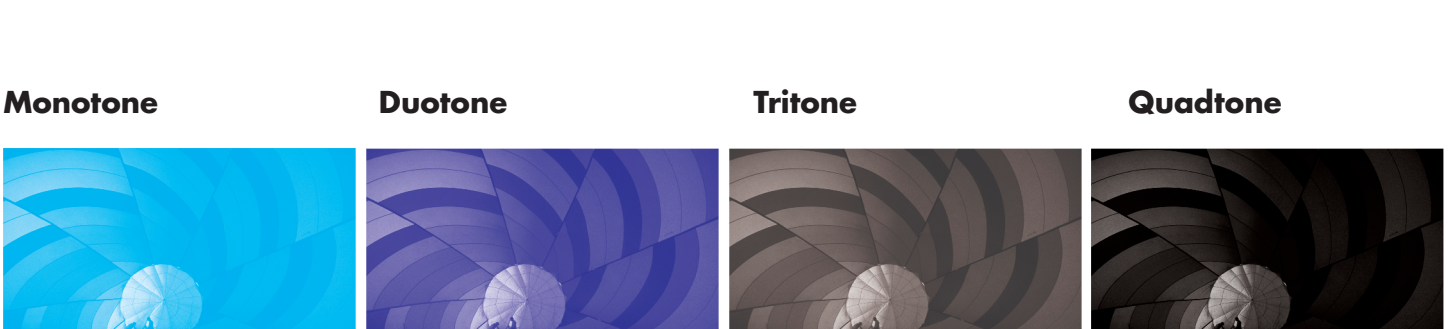
How To Create Duotones:

1.Convert to Grayscale
2.Image>Mode>Duotone
3.Choose colors
4.Choose curves
5.Choose overprint colors





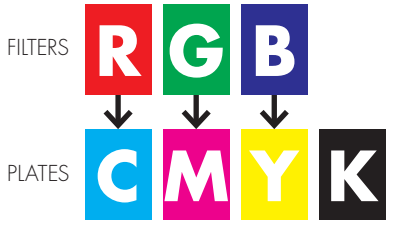
Monotone **Duotone** **Tritone** **Quadtone**



Color Separation

What is Color Separation?

When processing an image for print, images are broken into four halftone negatives or plates (depending what type of printer used). Light from the image passes though red, green, or blue filters to create either cyan, magenta, or yellow plates or negatives, respectively, abbreviated CMY. Because these three colors don't create proper black, a separate negative or plate is made for black, abbreviated K.



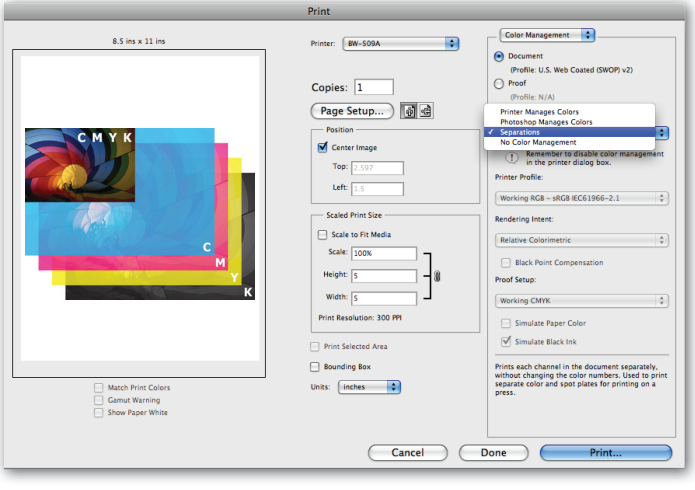
Previews of the color plates are visible in Photoshop under the Channels panel, where you choose to edit these for better reproduction.

Commercial printers may Request color separations in order confirm for the client how each plate will look.

CMYK

How to Print Separations:

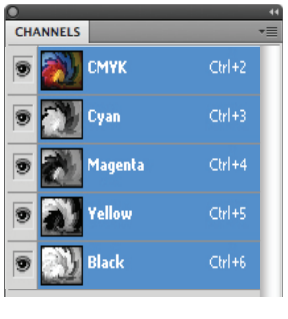
1.Once an image has been color corrected and is ready, click File>Print
2.Navigate to Color Management
3.Choose Separations under the Color Management drop-down box
4.Click Print

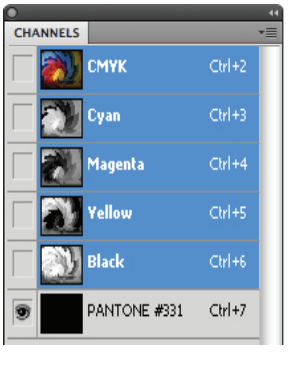


Spot Colors + UV

How to Create:

1.Create a selection
2.Go to Channels panel and create a new channel
3.Name the channel in order to specify to the printer what this extra negative or plate will be for, which is especially useful if you are using more than one spot color





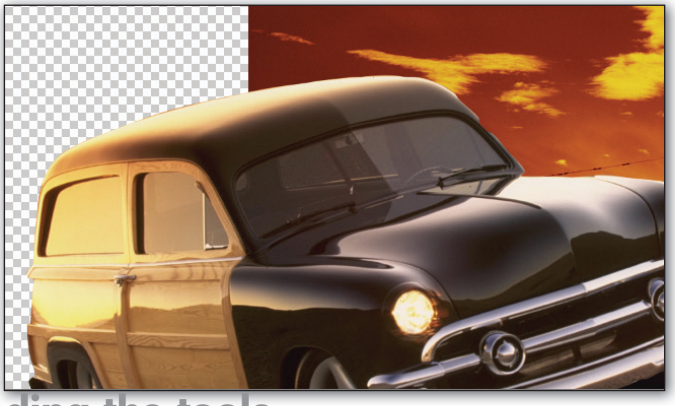
This method is excellent for screen printing and other types of specialty printing and finishing like UV coating.

page designed by Daniel Ugalde

Clipping Path

What is a Clipping Path?

A clipping path is a vector path or outline that acts as an x-acto knife, removing part of an image, in favor of a transparency,'knocking' out other portions of the original image.



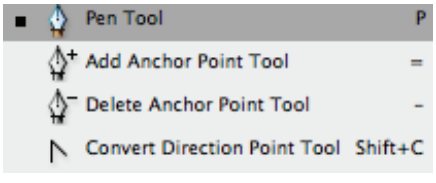
Finding the tools to make a clipping mask.

The tools needed for creating a clipping path are the 'selection', or 'pen' tool. Creating contours with the pen tool is detailed in the Illustrator manual and when creating a path, flatness determines, how closely the path adheres to the contours you've created

Conversion to Target Document

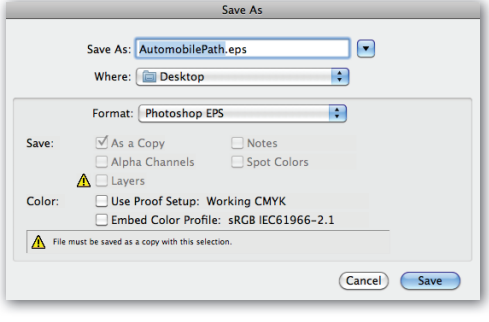
1 Creating the path

Refer to 'Pen Tool' in Illustration



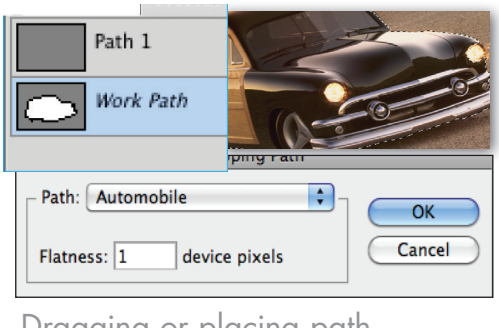
2 Saving the path

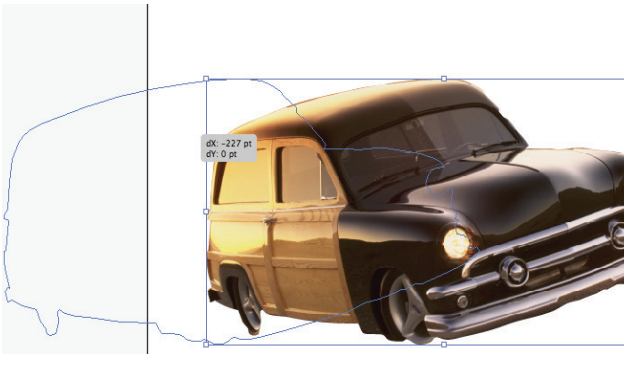
In 'Path Options' create a new "Clipping Path"; this can later be duplicated or saved. The 'Flatness' of the path is also controlled when you create the path.



3 Exporting the path as Encapsulated Postscript.

Saving the path as an EPS, allows it to be embedded or placed within Illustrator, Photoshop, PDFs, or any image editing software without the default 'white space' of the background, that you would receive otherwise placing the image.





4 Dragging or placing path within secondary document

Once saved as an EPS, the path can simply be dragged into the target document. The 'File-Place-Option is also effective in most programs.

Popular Uses for Clipping

A clipping path functions as a two dimensional 'green screen.' The path can be placed on a transparency or alternative background. Clipping path usually have anti-aliased edges, depending on the software.

Pre-Press for Images: Six Essential Steps

1 Resolution

First take into account any enlargement of the original artwork. Two lines line screen equals effective DPI (Dots per Inch) or PPI (Pixels per Inch)

Example 85 lpi (Lines per Inch) which is used in Newspaper print 85x2=170dpi

Examples

65-85 lpi- Newspapers (high dotgain 15%-30%) absorbs ink

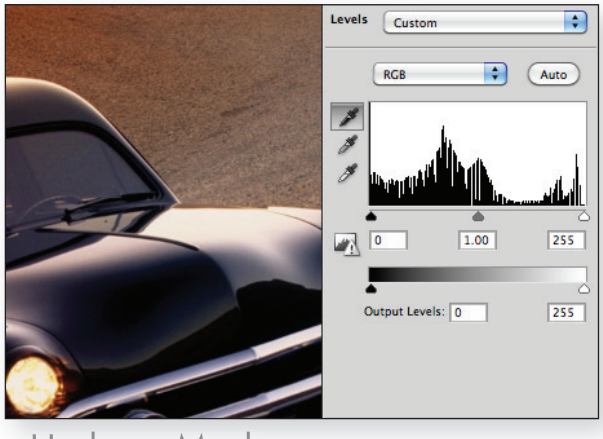
85-150 lpi- Magazine (dot gain 5-8%)

150-300 lpi-Fine Art publications (better quality coated paper allows for more detail-dot gain 2-7%

2 Color Correction

Entails setting Levels point values.

This step is adjusted before converting to CMYK from RGB.



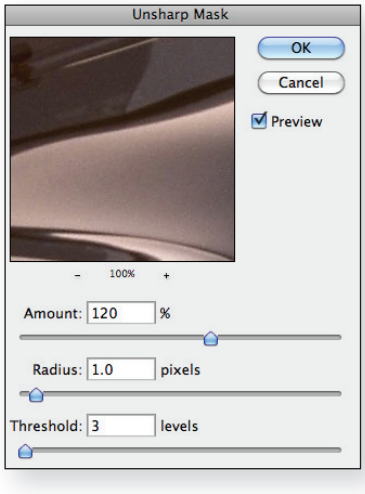
3 Unsharp Mask

Makes picture sharper than on screen for printing

Filter Menu-Sharpen

Unsharp Mask- This detects contrast along edges that will sharpen photo to compensate for dot gain

Amount-120
Radius-1
Threshold -3



4 Mode Conversion

Convert from RGB to CMYK

Ensure Photoshop color settings are set to U.S. Pre-Press before making the conversion.

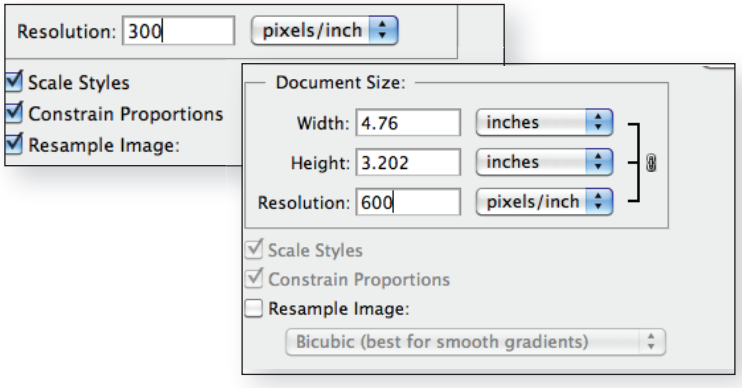


Image Size

-Uncheck resample image- (Resample means to add dots or throw them away)Adding dots that did not exist in the original will degrade the quality of the image

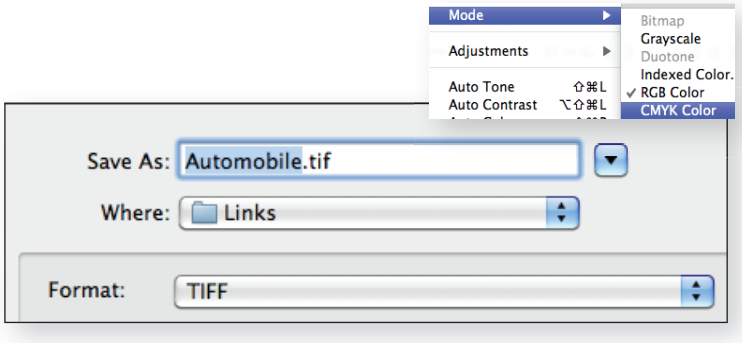
Ensure the photo does not need the higher resolution

5 Save as EPS or TIFF

EPS's are used for clipping paths and illustrations only. Saving as TIFF format is used for everything else.

Ensure the image/file is flattened before saving.

LZW-(This is file compression that is loss-less; It will save about half the file size



6 Import into Page Layout

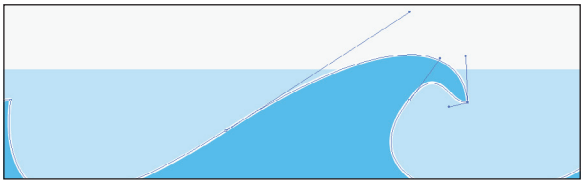
Package the file and produce a PDF of low (for revision) and high (fine art) quality.

Adobe Illustrator

What's so cool about Illustrator?

Illustrator is a vector drawing program where figures are created with points that create lines and curves. Also type can be easily manipulated

Unlike bitmap images that stores information in a grid of dots, Illustrator uses mathematical equations to draw out the shapes. This makes vector graphics scalable without the loss of resolution, lines are crisp and sharp at any sizes, illustrations print at high resolution, and produce smaller file sizes.



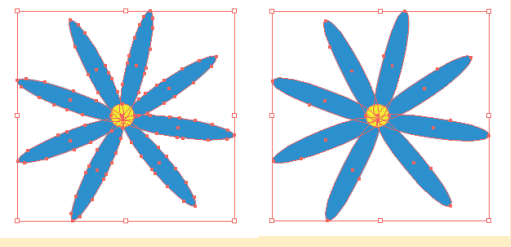
Most common uses for Illustrator:

Logo design, Illustrations, Cartoon drawing, Packaging design, Information graphics, Maps, Charts, and Diagrams

Preparing Illustrator files like a Pro

Your Illusrator pre-press checklist to help you avoid embarassing situations

Points: The Less the Better



Why is this important?

Each point on a line is a Postscript stack that needs to be processed before the RIP can proceed to process the line. Too many points can cause the RIP to crash or objects to fall off the art board. So a good habit when creating vector objects is to use the fewest points possible.

Go fix it

Select the object that you need to simplify > Object > Paths > Simplify

Crop Masks to Smallest Possible Size

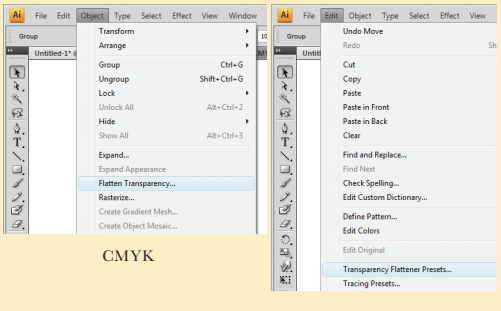
Why is this important?

A Mask is a window to something larger. If the image is too large it will increase your file size tremendously if embedded and also it may exceed outside the art board. When a file gets sent to print they have to process all the images that are outside the art board even though it doesn't print. Also increases file size. We're pros and save headaches.

Go fix it

Select the object or image > Menu Bar: Edit Original > Crop in Photoshop using the crop tool.

Flatten if Complicated



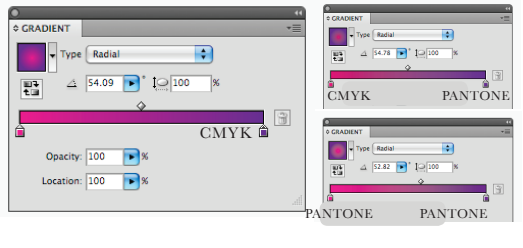
Why is this important?

If your file is too complicated, flatten it. What this does is simplify all the complicated elements on your art board such as: masks, transparencies, gradients, large images, and flattens it into one solid layer. It may create some slices but your overall job will print the same.

Go fix it

WARNING! Before you do this save a copy of the original and name this file something else. Go to Edit > Transparency Flattener Preset> Follow the instructions from there.

Color Correct Gradients



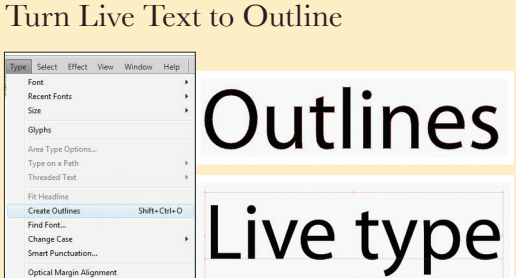
Why is this important?

A pantone color creates an extra plate on the printing press. A gradient containg two separate spot colors will not reproduce nicely. Neither will a gradient between a spot color and a cmyk color. Effective gradients can be achived by using cmyk colors.

Go fix it

Select the Object that needs the gradient corrected > Open the Gradient Palette (windows > Gradient) > Double click on the color and change it to corrected color.

Turn Live Text to Outline



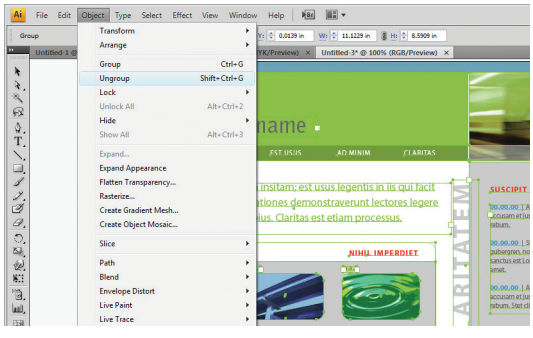
Why is this important?

So that the typeface you chose does not get changed when sent to another computer. If your printer doesn't have the font you chose it will substitute it for something else and alter the appearance and alignment of your doc. Before you convert your text to outline, save your document and create another name for the same document. You want to do this so that you can always go back and make changes. Once you go Outline, you can't go back!

Go fix it

Select all the type with the selection tool > Type > Create Outlines. Voila! It's been done. Illustrator just turned your live editable text into shapes with points.

Ungroup If Possible



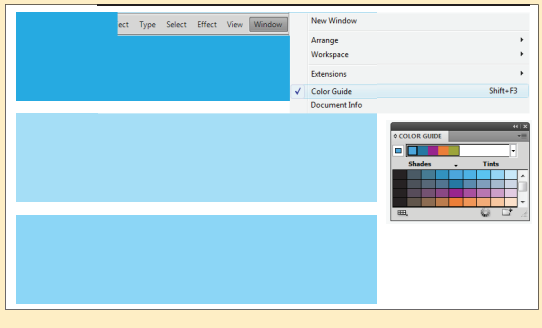
Why is this important?

Grouping objects in an illustration can cause the RIP to crash. Post Script is organized into a series of stacks. Each object comes with a stack of code. When two objects get grouped an additional stack is produced. After you make the correction nothing will vappear altered, but the amount of code that is sent to the RIP is more than necessary. So before sending your job to the printer, ungroup everything.

Go fix it

Select all the objects and ungroup each of them by either going to edit > Ungroup. Or Right clicking and selecting ungroup.

Transperancies to Tints



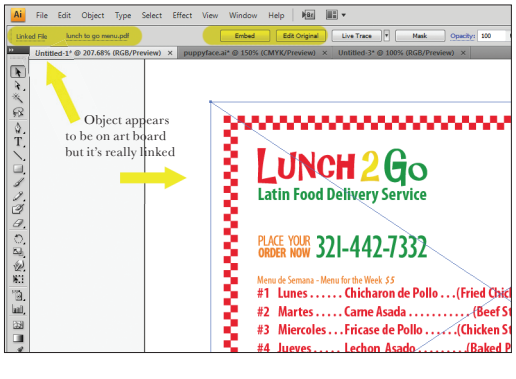
Why is this important?

Ink or no ink that's how the printer thinks! Transparencies don't really exist. The printer either squirts ink or no ink. SO a transparency actually translates in either a fully filled halftone dot or a percentage of it. So instead of lowering the opacity or the transparency of an object in order to get a new "cooler" color try using a tint of the same color.

Go fix it

Select the Object with the transparency > Change the transparency back to 100%: Window > Transparency. Now that your object is totally opaque, select it again and go to windows > color guide> and select a tint of the original color.

Make Sure What's There is There: Linked, Placed, and Smart Objects



Why is this important?

If you send your Illustrator file with linked, placed or smart objects you have to include all those separate items in a folder along with the AI file. If you don't, when you send your final art design to the printers, your file will open but all your linked, placed, and smart objects will not be there. Just because you see it on your art board doesn't mean it's really there. To ensure this doesn't happen package your work.

Go fix it

Select the linked object. On the top menu select "embed". This makes your object officially apart of your file. If the object is too large, you have to create a folder and place your AI doc along with all the linked, placed or smart objects. Place all the fonts you used as well. Once you have everything included in your folder you've created your package.

What is Trapping

Trapping is a method of correction in print. When objects & colors don't align properly there can be a gap, (knockout). This is called misregistration. Trapping compensates for the possibility of misregistration on the printing press by making the gap less noticeable, even invisible.

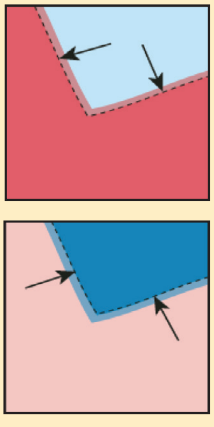
Spreads & Choke

1 Spreads

A spread is when a lighter object overlaps a darker background and seems to spread into the background.

2 Choke

A choke uses a lighter background to overlap a darker object that falls within the background and seems to squeeze or reduce the object.



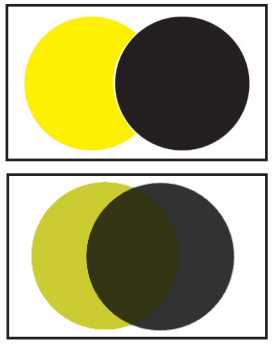
Knockouts & Overprint

1 Knockouts

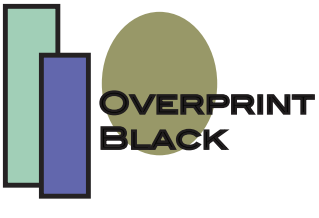
In most cases, when 2 objects of different colors overlap they knockout, they won't print on top of each other. In reality the color are printed side by side so there is a chance that the colors can get out of register. They may require trapping.

2 Overprint

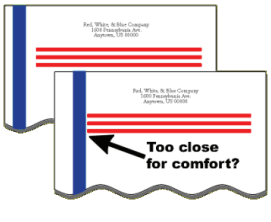
Need to Trap when there is overprinted objects (also call surprinting). When objects are printed over other objects it mix the ink & result in unexpected colors.



How to Avoid Trapping



Black Outlines:
Use black outlines around objects and on black text to avoid overprint & knockouts.

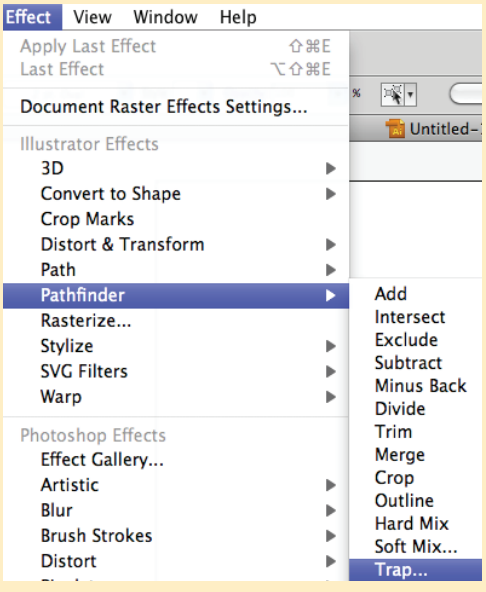


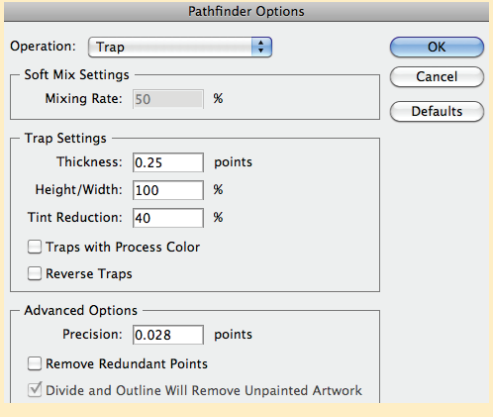
Too Close Trapping :
Avoid touching or almost touching other colors to avoid knockout on objects.

Process Color Trapping:
Use Common Process colors to close gaps can prevent knockouts and overprints.

How do you trap in Illustrator?

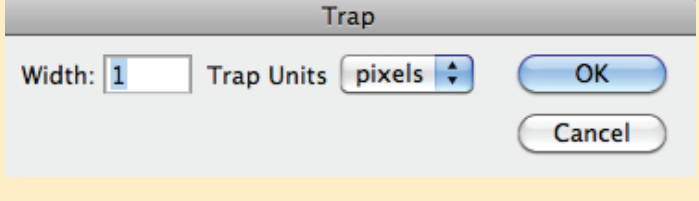
1. Select the two images you want to trap at the same time.
2. From the EFFECT menu, select PATHFINDER, and click the option TRAP. In the Pathfinder dialog box you can choose the thickness, height/width, and tint reduction among other trapping options. Then, click OK.
3. Then Pathfinder will compare the two images, and select the lighter color to overlap the darker one.

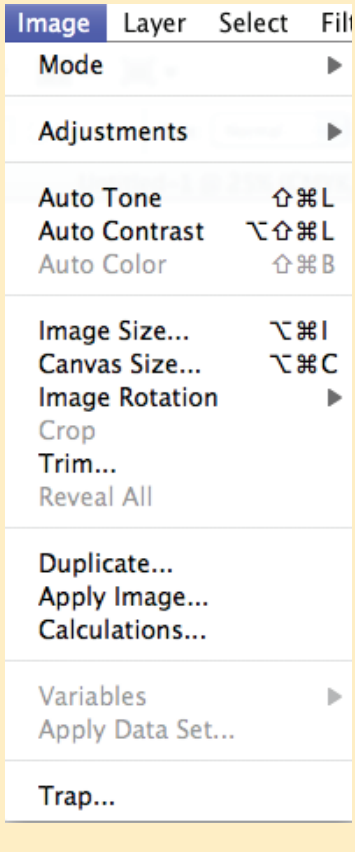




Best way to trap in Photoshop:

1. In order to use Photoshop Trap options you must open your images in CMYK mode.
2. Select the area that could be a misregistration.
3. From the IMAGE menu, select TRAP dialog box enter trap width, and click OK.
4. Photoshop automatically creates traps to compensate any possible gap within your selection.





Gerardo Machado & Rick Pace

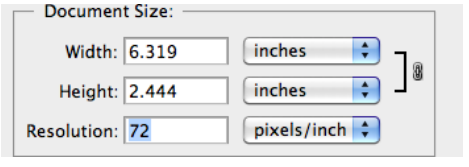
Adobe Preflight

What's so cool about Preflighting?

The term preflight check originates from the aviation industry where it is a standard procedure for pilots to go over a checklist before lift-off. Preflight checks (preflighting) for print documents have a similar idea in mind. They run through all the files you used in the document to see if they're missing, changed or anything else that might have happened to the file. The Preflight Check dialog screen uses categorized sections to check your documents on errors and missing files.

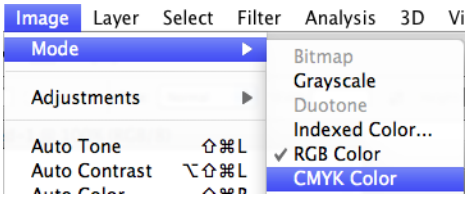
Photoshop Pre-Press for Images

1. Resolution: You must take into account the enlargement of original art work 2x line screen= the correct PPI or DPI



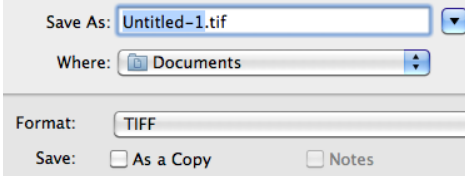
2. Color Correction: Make before converting to CMYK, there is more color control in RGB.

3. Unsharp-Mask: Needed for dot gain, make picture sharper than on screen for printing.



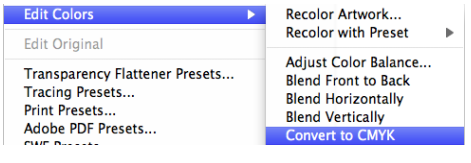
4. Mode Conversion: RGB to CMYK. Make sure Photoshop color settings are set to U.S. Pre-Press defaults before making the conversion.

5. Save as EPS or TIFF



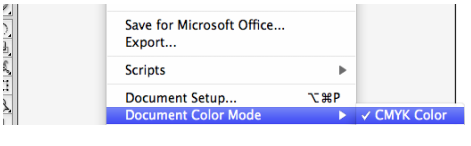
6. Import into page layout program.

1. Illustrator Pre-Press for Images
Note: Before preparing document for press, make sure to keep a backup .ai copy.



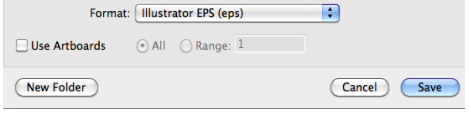
2. Convert Pantone to CMYK. Edit> Edit Colors> Convert to CMYK

3. Convert color mode to CMYK. File> Document Color Mode> CMYK



4. Outline all text in document. Flatten transperencies which include opacity and gradients.

5. Save as EPS.



6. Import into page layout program.

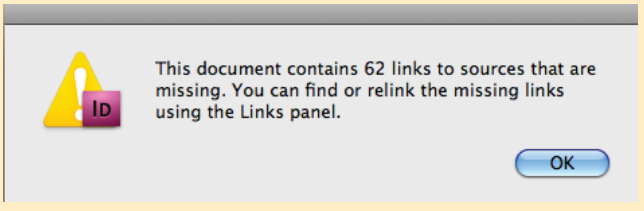
Alyssa Garcia, Daniel Santillo, Michael Evins and Salomon O. Carrasco

InDesign Pre-Flight

Getting Started

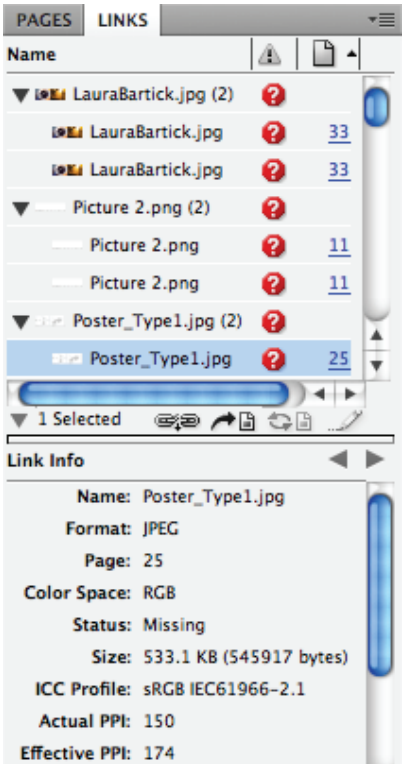
Opening a document

You ever open up a document and it says that you are missing links? You probably think nothing of it and just clicked ok. This is a big mistake and we will tell you why.



Checking Your Links Panel

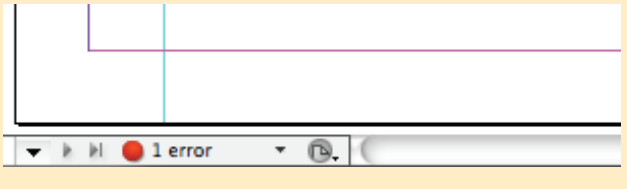
Your links panel shows you where you are having problems with missing and/or broken links to a text box, picture, or file. The links info panel shows you all the data contained within the specified file. Such as...



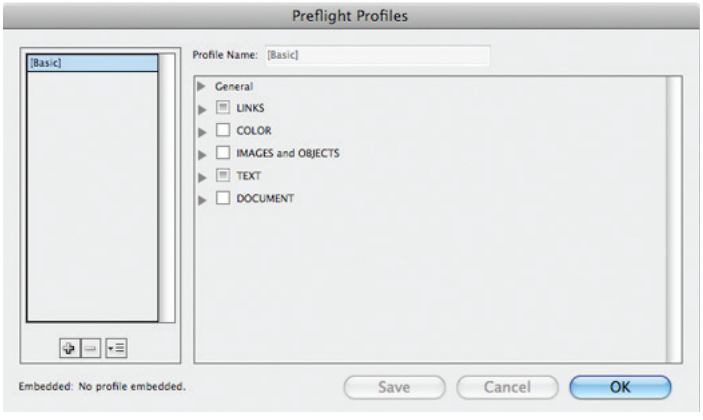
Name – name of the linked file.
Format – such as jpeg, tiff, illustrator, photoshop file, etc...
Page – what page the error is on.
Color Space – such as RGB, sRGB, CMYK.
Status – such as if the file is missing or unlinked in some way.
Size – the size of the file.
ICC Profile – defines the amount of saturation of colors available in the color space; i.e. the bluest blue your printer can produce.
Actual PPI – the resolution of the image at 100% size.
Effective PPI – the resolution of the image at the size it's been scaled to in InDesign.
For Example: a 300 ppi image, if scaled 50% in InDesign, is actually 600 ppi when reduced to that size.

Problems with your document

You are about to send you project out to your local printshop but wait, before you do that you need to check to make sure you dont have any errors.

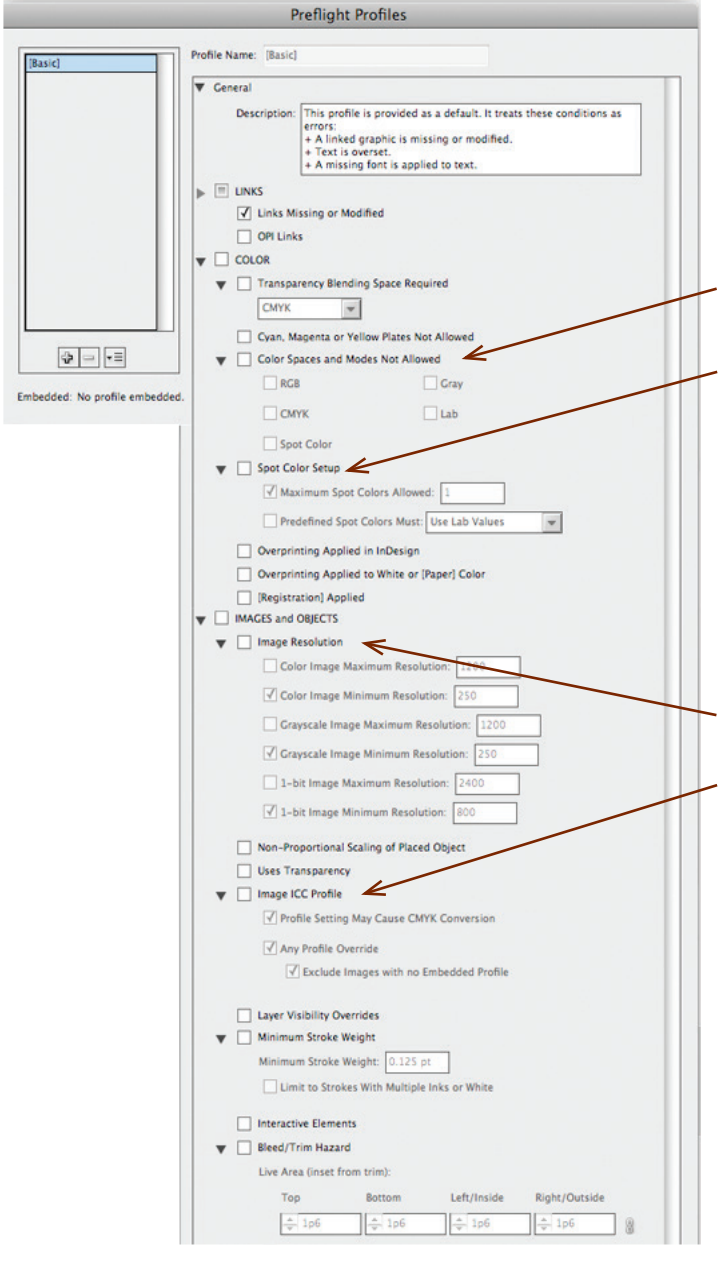


Alyssa Garcia, Daniel Santillo, Michael Evins and Salomon O. Carrasco



The Preflight Panel

This panel is used to not only make layout corrections, but to actually have the program make them for you. This panel will show you everything that you may be looking out for before you send the files to your printshop.



Pre-Press Checklist

Spelling

- ☐ A final spell check was done and there are no misspelled words.

Color

- ☐ Make sure the only color modes in the file are those that you want.
- ☐ Spot colors are defined as a mixture of colors and process colors are defined as a separate as 4-color process.
- ☐ Imported images are built in the correct color space to be separated as required.

Images

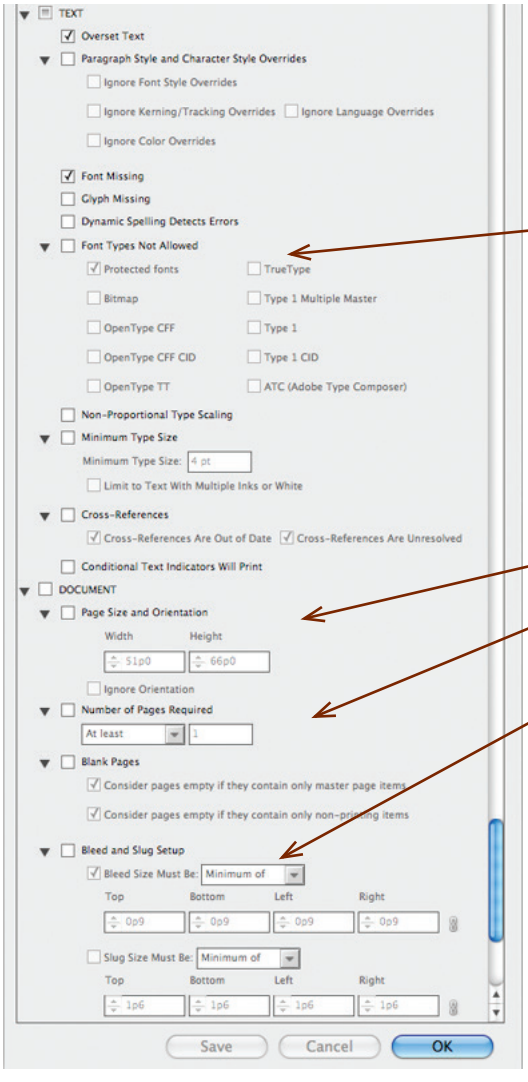
- ☐ All images are the proper resolution for the required press linescreen.
- ☐ All imported images have the correct corresponding colors to be printed.
- ☐ All imported images are built in the correct color space for separations, e.g. CMYK vs. RGB.
- ☐ All imported images are an appropriate format for printing, e.g. tiff or eps vs. gif or jpeg.

Any low-resolution FPO images have been replaced with their high- resolution counterpart.

Bleed

A 1/8” bleed (or amount desired by printer) has been built into the document if necessary.

Alyssa Garcia, Daniel Santillo, Michael Evins and Salomon O. Carrasco



Pre-Press Checklist (cont.)

Fonts/Typography

- ☐ Make sure that you define the types of fonts that you want to have in your documents.
- ☐ Fonts are defined in document using the actual font, not QuarkXpress' fake bold or italic.
- ☐ You have both the printer and screen fonts available for all typefaces used to send to the printer.

Document

- ☐ To insure pages are oriented in the correct way and size.
- ☐ Moniter how many pages that you wish to incorporate in your document.
- ☐ The bleed and slug areas are discarded when the document is trimmed to its final page size. Objects outside the bleed or slug area (whichever extends farthest) are not printed.

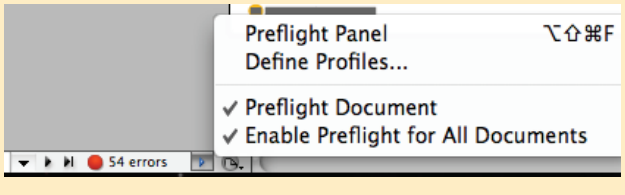
Collect For Output

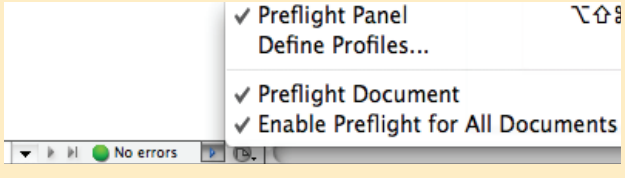
- ☐ Laser prints of separations have been printed to correspond with composites.
- ☐ Composite file to be marked with notes for the vendor.
- ☐ A disk directory has been printed, and file(s) to be output are highlighted.
- ☐ Package document to make sure all files are together to make sure all images, fonts and graphics are arranged, in a folder to be sent to the vendor.

Completing your document

If you have any errors, missing images for example, Indesign will display a red circle indicating there is an error and how many errors are in your document.

After everything is done correctly according to how you have setup your Preflight Panel and profiles you should have no errors in your document. The Red Circle should now display green.





Alyssa Garcia, Daniel Santillo, Michael Evins and Salomon O. Carrasco

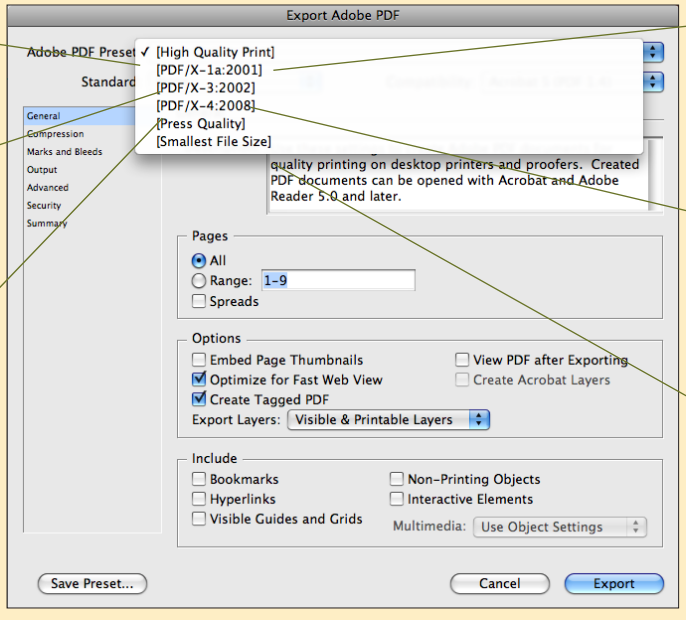
PDF Workflow

Adobe PDF files are used for high-resolution printing.

High Quality Print
Output for desktop and proofers. File size compression and downsampling. Embedded fonts.

PDF/X-3:2002
High-resolution output file (CMYK or RGB workflow) Compression identical to the Press preset. Doesn't allow security settings. Transparency must be flattened.

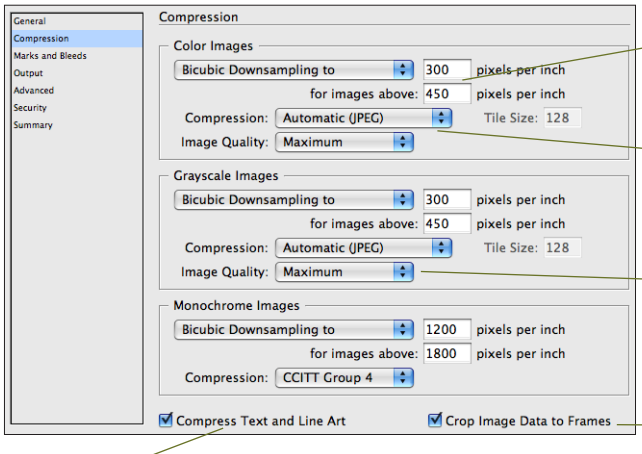
Press Quality
Output for prepress devices such as an image setter, plate setter, or digital press. Doesn't convert color spaces. File size compression downsampling. Embedded fonts.



PDF/X-1a:2001
High-resolution CMYK output file. Compression identical to the Press preset. RGB colors converted to CMYK. Spot colors supported. Transparency must be flattened.

PDF/X-4:2008
Output for desktop and proofers. File size compression and downsampling. Embedded fonts.
Live transparency and layers supported.

Smallest File Size
Output for web, intranet, or e-mail system. Small document. File size compression and downsampling to monitor resolution.



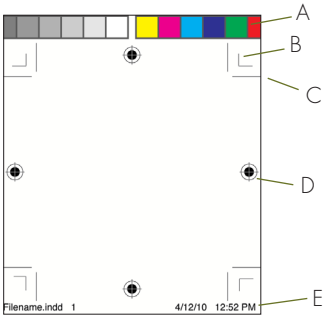
Refers to decreasing the number of pixels in an image. To downsample an image, choose an interpolation method and enter the desired resolution (in pixels per inch)

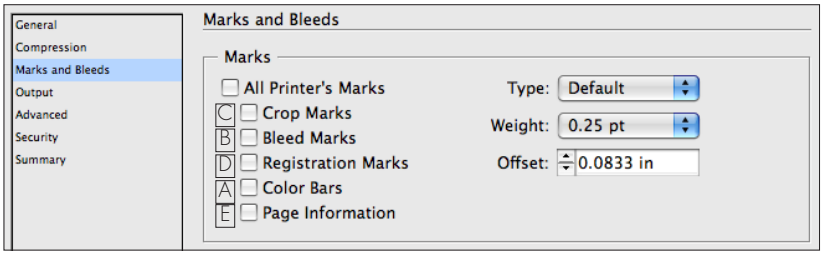
Type of compression that is used to reduce the file size.

Determines the amount of compression that is applied. For JPEG or JPEG 2000, you can choose Minimum, Low, Medium, or Maximum quality. For ZIP, only 8-bit is available.

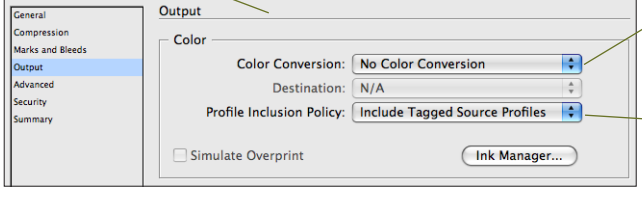
May reduce file size by exporting only image data that falls within the visible portion of the frame.

Applies flattened compression to all text and line art in the document, without loss of detail or quality.





Controls how colors and PDF/X output intent profiles are saved in the PDF file.



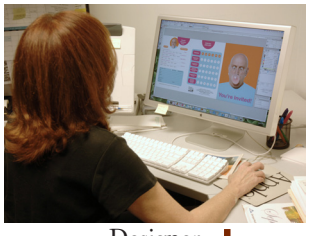
Specifies how to represent color information in the Adobe PDF file. All spot color information is preserved during color conversion; only the process color equivalents convert to the designated color space.

Determines whether a color profile is included in the file. The options vary, depending on the setting in the Color Conversion menu, whether one of the PDF/X standards is selected, and whether color management is on or off.

The Printing Press

In the next chapter, you will learn in detail all about the traditional process printing method. But first, let's get familiar with the three main types of press available today:

Traditional



Designer

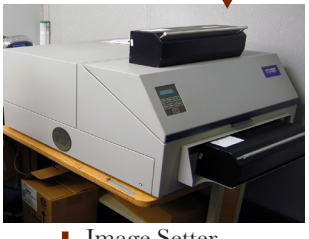
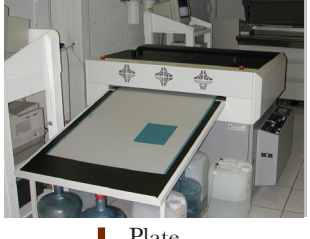


Image Setter

Film



Plate

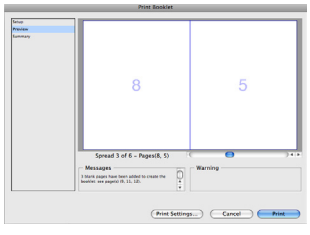
Press

PROS:
The most accurate proofing system.

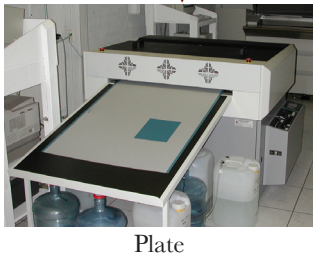
CONS:
Create a lot of paper waste.
The longest and most expensive.

Direct to Plate

Designer



Electronic Imposing



Plate

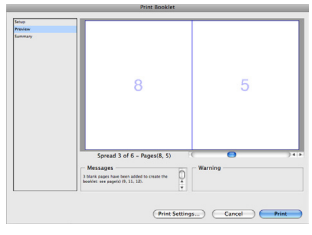
Press

PROS:
Save time and money eliminating film step.

CONS:
Can't create color key proofs.

Digital

Designer



Electronic Imposing

PROS:
The most advance, cheapest, and fastest printing system.
Everything is done electronically.
Very little labour involved.
Use of Pantone and 4 colors.
Simple proofing system.
Less paper waste is created.

CONS:
More cost per piece.
Limited Medium.

Colors and Logos

Color Meanings

Energy, warmth, joy, intellect, caution, cheerfulness, friendliness.

Danger, passion, daring, romance, style, excitement, urgency, energetic.

Energy, change, movement, vitality, sense of welcoming.

Life, growth, environment, healing, money, safety, relaxation, freshness, new beginning, harmony.

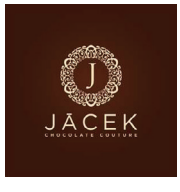
Peace, stability, calmness, confidence, tranquility, sincerity, affection, integrity, responsibility.

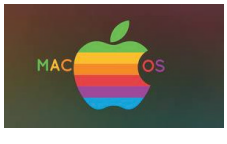
Royalty, luxury, dignity, spirituality, passion, vision, magic, creative, romance, inspiration.

Dependability, earthiness, dull feeling of warmth, wholesomeness, friendliness.

Sophistication, power, mystery, formality, evil, death, elegance.

Hyper, indescribable, Mercurial, conflicted, disorganized, wild, high energy, pandemonium.

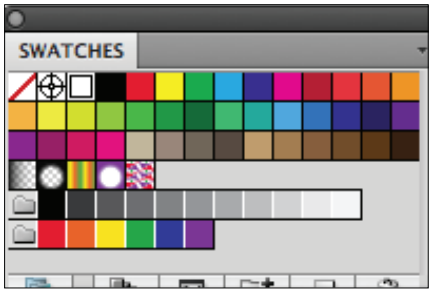




Types of Spot Colors

PANTONE

The Pantone Matching System, or PMS, is the internationally recognized standardized color-matching system that is privately owned by the Pantone Corporation. Because individual perceptions of the color spectrum vary widely, the Pantone system is used throughout color-critical industries as the definitive source for accurate color communication, ensuring that colors are consistent across projects, designers, printers and companies.



- ANPA Color
- DIC Color Guide
- FOCOLTONE
- HKS E Process
- HKS E
- HKS K Process
- HKS K
- HKS N Process
- HKS N
- HKS Z Process
- HKS Z
- PANTONE color bridge CMYK EC
- PANTONE color bridge CMYK PC
- PANTONE color bridge CMYK UP
- PANTONE metallic coated
- PANTONE pastel coated
- PANTONE pastel uncoated
- PANTONE process coated
- PANTONE process uncoated
- PANTONE solid coated
- PANTONE solid matte
- PANTONE solid to process EURO
- PANTONE solid to process
- PANTONE solid uncoated
- TOYO 94 COLOR FINDER
- TOYO COLOR FINDER
- TRUMATCH

TOYO

Toyo is a common spot color system in Japan and in offset printing, a spot color is any color generated by an ink (pure or mixed) that is printed using a single run.

Toyo inks come in 1050 colors while pantone inks provide 1114 standard colors, and even their 'hexachrome' system (CMYK + hexachrome orange + hexachrome green), while supposedly "meeting or exceeding the RGB gamut", has only about 2000 numbered colors:

HKS

The HKS is a colour system which contains 120 spot colours and 3250 tones for coated and uncoated paper. HKS is an abbreviation of three German colour manufacturers: Hostmann-Steinberg Druckfarben, Kast + Ehinger Druckfarben, and H. Schmincke & Co.

HKS colours, similar to Pantone colours, can be used in any kind of print publication to produce predictable colours. As in the Pantone colour system, there are HKS colours that cannot be reproduced using the CMYK colour space, like bright orange or certain tones of blue.

The Printing Press

Letterpress

is relief printing of text and image using a press with a "type-high bed" printing press and movable type, in which a reversed, raised surface is inked and then pressed into a sheet of paper to obtain a positive right-reading image.

Lithography

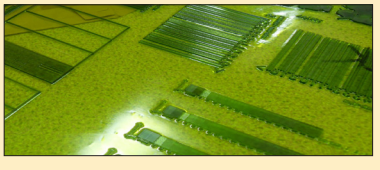
is a method for printing using a stone (lithographic limestone) or a metal plate with a completely smooth surface.

Intaglio

is a family of printmaking techniques in which the image is incised into a surface, known as the matrix or plate.

Vinyl

Used for printing banners and billboards.



Flexography

is a form of printing process which utilizes a flexible relief plate.

Screen printing

Is a printing technique that uses a woven mesh to support an ink-blocking stencil.

Die cut

is a striking way to make unique die cuts using digital photographs, stock images or simple shapes and patterns. Can be used in many projects from decorating scrapbooks and creating homemade cards to decorating paper dolls and making game pieces.

Foil

typically a commercial print process, is the application of pigment or metallic foil, often gold or silver , but can also be various patterns or what is known as pastel foil which is a flat opaque color or white special film-backed material, to paper where a heated die is stamped onto the foil, making it adhere to the surface leaving the design of the die on the paper.

How paper is made

Papermaking process

Paper is produced by pressing together moist fibers, typically cellulose pulp derived from wood, rags or grasses, and drying them into flexible sheets. Paper is a versatile material with many uses the most common is for writing and printing.

Chemical Pulping

The purpose of a chemical pulping process is to break down the chemical structure of lignin and render it soluble in the cooking liquor, so that it may be washed from the cellulose fibers. The pulp can also be bleached to produce white paper for printing, painting and writing. Paper made from chemical pulps are also known as wood-free papers.

-The microscopic structure of paper under ultraviolet illumination.

Mechanical Pulping

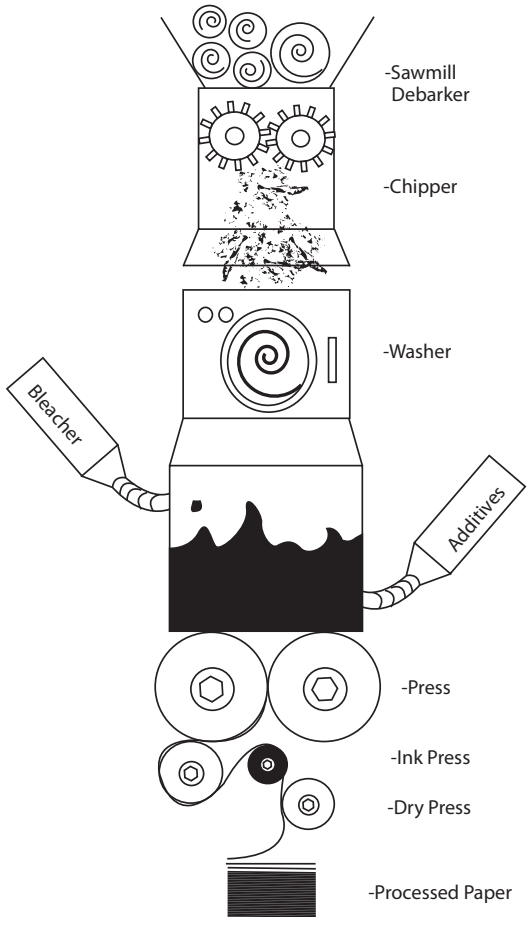
There are two major mechanical pulps, thermo mechanical pulp (TMP) and groundwood pulp (GW). In the TMP process, wood is chipped and then fed into large steam-heated refiners where the chips are squeezed and made into fibres between two steel discs. In the groundwood process, debarked logs are fed into grinders where they are pressed against rotating stones and made into fibres. Mechanical pulping does not remove the lignin, so the yield is very high, >95%, but also causes paper made from this pulp to yellow and become brittle over time. Mechanical pulps have rather short fibre lengths and produce weak paper. Although large amounts of electrical energy are required to produce mechanical pulp, it costs less than chemical pulp.

Deinked Pulp

Paper recycling processes can use either chemical or mechanical pulp. By mixing with water and applying mechanical action the hydrogen bonds in the paper can be broken and fibres separated again. Most recycled paper contains a proportion of virgin fibre in the interests of quality. Generally deinked pulp is of the same quality or lower than the collected paper it was made from.

Why is this important?

Recycled papers can be made from 100% recycled materials or blended with virgin pulp. They are (generally) not as strong nor as bright as papers made from virgin pulp.



Producing paper

The pulp is feed to a paper machine where it is formed as a paper web and the water is removed from it by pressing and drying.

Pressing the sheet removes the water by force. Once the water is forced from the sheet, felt (not to be confused with the traditional felt) is used to collect the water. When making paper by hand, a blotter sheet is used. Drying involves using air and or heat to remove water from the paper sheet.

Finishing Paper Process

The paper may then undergo sizing to alter its physical properties for use in various applications. Paper at this point is uncoated. Coated paper has a thin layer of material such as calcium carbonate or china clay applied to one or both sides in order to create a surface more suitable for high-resolution halftone screens. (Uncoated papers are rarely suitable for screens above 150 lpi.) Coated or uncoated papers may have their surfaces polished by calendering. Coated papers are divided into matte, semi-matte or silk, and gloss. Gloss papers give the highest optical density in the printed image.

illustrations done by Mark A. Herrera Image and text from wikipedia.com

Choosing the Right Paper

Why is important to know about paper?

Choosing the right paper for a design is crucial. Different papers take ink differently. Paper can affect the legibility of type, the texture, tone, and personality of a piece.

Choosing paper is more complex than just picking the most expensive sheet and keeping your fingers crossed.

In fact, you shouldn't think about choosing paper based on the highest quality available, or the highest quality you can afford. Rather, you should figure out the most appropriate quality paper for your needs because most appropriate equals best. The point is - no one sheet fits every project.

Here it is a guide to help you choose the appropriate paper for your design.

Ask Yourself Some Questions

It's recommended that in the beginning of your project, you take your time and think about some issues:

1. What is your final product? It can be a book, poster, flyer, business card, etc.
2. How long would you like the durability of the product to last? A book that will be read throughout the years should definitely be planned for a longer durability than a one day flyer.
3. What feeling do you want your product to give the receiver? Should it be fancy? Cheap? Solid? Traditional?
4. What kind of material will the product be handling? Will it be spread after spread with large photos? Or a textbook?
5. Will the piece be mailed, mass mailed or handed out personally to selected prospects?

After you've answered these questions you can take a look at the different elements that can be crucial for your paper choice: finish, weight, thickness, opacity, brightness, and color.

Finish

The finish of a paper is its surface texture. Consider the look you want to achieve, and choose a finish that fits your needs:

Wove or Smooth - A smooth uncoated surface.

Laid - A paper that is manufactured with textured lines on its surface. This finish is used mostly for business stationery elements, like letterhead, envelopes and business cards.

Linen - Similar to a laid finish, this paper has textured lines on the surface of the sheet, but they are finer and more regular than those that appear on a laid finish stock. This paper is also used frequently for business stationery

Laser - A paper that is guaranteed to be compatible with laser printers.

Coated - A paper with a waxy finish (shiny or matte).

Uncoated - A paper with an untreated surface that is dull and unreflective.

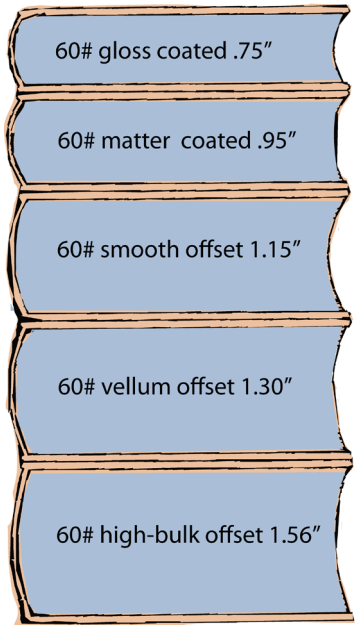
Coated One Side (C1S) - A cover stock that has a coating on one side and is dull on the reverse side.

Coated Two Sides (C2S) - A cover stock that has a coating on both sides.

Page designed by Thais Almeida

EQUIVALENT WEIGHTS

Bond (lbs)	Offset (lbs)	Cover (lbs)	Tag (lbs)	Index (lbs)	Metric (g/m^2)
29	73	40	62	60	109.11
31	81	43	73	66	118.42
35	90	48	80	74	131.68
36	90	50	82	75	135.45
39	100	54	91	81	148.02
40	100	56	93	83	150.5
43	110	60	100	90	161.78
44	110	61	102	92	165.55
47	120	65	108	97	176.83
53	135	74	122	110	199.41
54	137	75	125	113	203.1
58	146	80	134	120	218.22
65	165	90	150	135	244.56



Weight

It can be measured in a couple of different ways depending on the country you're working in. Two of the most used are grams per square metre and the pound weight of a ream (500 sheets) in the basic size for that grade. In the US it is measured in pounds. For different types of paper the size of the basis ream may differ resulting in vastly different weights. For example, basis 70 means that 500 sheets 25 x 38 inches of book paper weigh 70 pounds. This is equivalent to 104 g/m^2 in the metric system.

Opacity

A paper's opacity is determined by its weight, ingredients and absorbency. A paper's opacity determines how much printing will show through on the reverse side of a sheet. Opacity is expressed in terms of it's percentage of reflection. Complete opacity is 100% and complete transparency is 0%.

Caliper/ Thickness

Thickness is referred to as caliper and is measured in mils or thousandths of a inch. In general, the more a sheet of paper weights, the thicker and/or stiffer it is.

Paper caliper determines thickness of the printed piece, an important consideration with products such as books, catalogs and directories. The chart on the left represents books made from 248 sheets (496 pages) of typical 60# papers.

When imagining the books represented in this chart, keep in mind that all five have identical heights. Although some are thinner than others, all contains 496 pages of paper with the same basis weight.

Brightness

The brightness measures the percentage of a wavelength of blue light that a sheet reflects. It's typically expressed on a scale of 1 to 100 with 100 being the brightest. Most papers reflect 60-90% of light. The brightness of a paper can effect readability, the perception of ink color and the contrast between light and dark hues.

Color

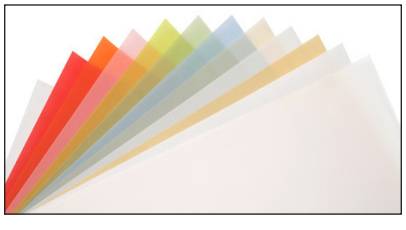
Color is especially important as it affects the color reproduction of lighter tints. Paper colors vary with advertising fads from cool to warm shades. Type is more easily read against a soft (yellowish) white, while process color reproduce most accurately on neutral white paper.

Specialty Papers

There is a vast array of paper available for the graphic designer. Each project you work on will required a specific type of paper. The most used papers have a smooth finish and come in a full range of white shades. Specialty papers add elements of texture and color and help set the mood for your project.

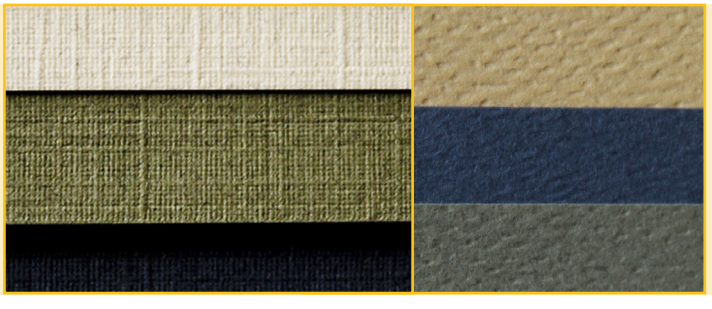
Offset and Bond papers are thin and smooth. Often used for publication interior sheets, brochures & flyers, and letterheads and envelopes.

Cover stocks are heavy in weight, rigid and not easily folded. These papers are generally used for publication covers, business cards, greeting cards, folders, and postcards. They can have coated or uncoated finishes.



Translucent is a thin paper that has some clarity allowing any content placed beneath it to be viewed (semi-transparent).

Linen paper has a texture created by embossing that looks like linen cloth. Felt papers are manufactured using fabric blankets pressed onto the wet paper. Laid paper has a ribbed texture. These papers are heavier than most Offset and Bond papers. Often used in portfolio presentations for businesses.



Metallic papers are coated with a thin film containing metal or a thin film of plastic whose color and gloss simulate metal. It comes in a range of weights and colors.

Metals used for metallic papers are often highly toxic and cannot be recycled, there are environmentally responsible metallics available

Page Design Lee Brock

Recycled and Alternative Papers

Recycling paper and purchasing recycled paper reduces the amount of waste we send to landfills and incinerators. When compared with 100% virgin fiber copy paper, 100% recycled copy paper is estimated to reduce solid waste by 49%.

Paper made from fibers other than trees can be environmentally friendly and be visually interesting.

Alternative papers are made from Hemp, Rice, Coffee, Coconut, Sugar Cane, Banana, Recycled rags.

Hemp paper

Sugar Cane paper

Recycled rag paper

Paper accounts for an average of 40% of landfill volume.

Symbols to look for:

FSC

Forest Stewardship Council (FSC), is a non-profit organization set up to encourage the use of sustainable practices in forestry worldwide.

Totally chlorine free applies to virgin fiber papers that are unbleached or processed with a sequence that includes no chlorine or chlorine derivatives.

GREEN SEAL CERTIFIED

Green seal certifies environmentally responsible practices among manufacturers or paper products, from fine printing papers to coffee filters.

Green-e.org

The Green-e mark is offered by the non-profit Center for Resource Solutions to indicate companies that purchase or generate certified renewable energy.

Recyclable only means that a material or product can be recycled. It does not necessarily contain recycled material.

To qualify for(Post Consumer Waste) certification, the paper must contain a defined percentage of waste paper reclaimed after consumer use.

Print Proofing

Why is this important?

As you know, printing is a costly and work-intensive process. It is crucial that you follow these simple steps to make sure your files are properly setup for the printer, as making changes at this stage of the design process can become very expensive and time-consuming.

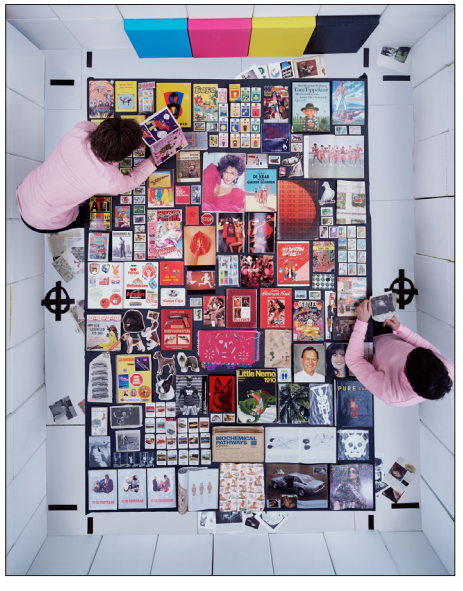
Setup:

WARNING! Before you do this save a copy of the original and name this file something else. Make sure your files are packaged and no editing must still be done.

Print Proof

Print Proof

A general term for a variety of options for seeing what your file will look like when printed is a proof. Think of it as evidence (proof) that what you put into your digital file will all come out on the printed page exactly as you intend: the right fonts, graphics, colors, margins, and overall positioning.

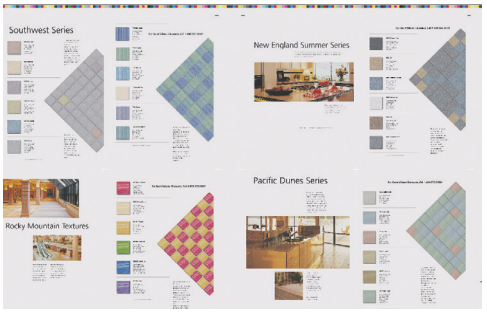


Using It Wisely

Printing proofs are used for checking that all text and graphics and colors come out as expected before going to press. It is a good practice to print a proof from your desktop printer and send along with your digital files to your service bureau or commercial printer. They can be black and white or in color but a good PostScript laser proof is ideal. If the file won't print properly to a desktop printer, chances are it won't come out on the printer press correctly either. Proofing your work comes at various stages but there are specific types of proofs created during prepress and printing that allow the designer to see if their piece will come out as intended in the final printing. Different types of printing proofs are more accurate than others but with increased accuracy comes increased costs.

- **Full-Color** Make sure your files are in CMYK format only. Do not use RGB or any other color systems as they don't give an accurate representation of what will print.
- **Spot-Colors** Make sure to specify all Spot Colors. Choose colors from Pantone matching system. Files must be setup with appropriate colors in order to separate correctly..
- **Fonts** Make sure all fonts are either embedded or sent with the file.
- **Trim-Area** All borders, text and important images are 1/4" away from the edge of trim size.
- **Lines** Keep lines (rules) more than .5 (1/2pt). If they are less than .5, they might not print.
- **Resolution** Make sure all images are 300dpi or 350dpi in order to produce the highest quality result. Although 72dpi may look acceptable on your monitor, it will result in poor image quality on printed products.
- **Bleeds** If you want any of your printed pieces to print to the edge of the paper (BLEED), make sure you provide a 1/8" of extra image all around.
- **Rich-Black** (C-65 M-53 Y- 51 K-100) should be applied to large areas of black. Applying this code will ensure a consistent dense color when printed. Please be aware of the percentages of colors in that black color area.
- **Spell-Check** Make sure you use spell check and grammar check throughout your piece before submitting the final copy. While most printing companies have their prep department review every file, they cannot guarantee all errors will be caught.

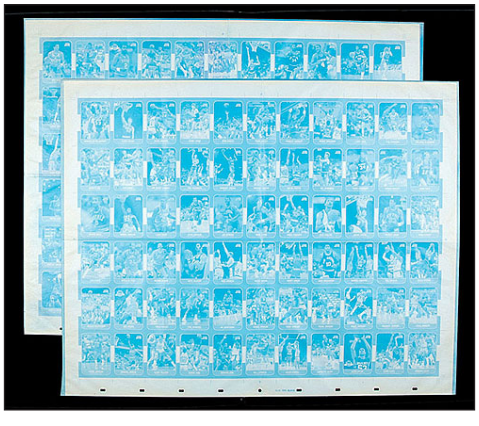
A prepress proof is an analog or digital proof that uses inkjet, toner, dyes, overlays, photographic, film, or other techniques to give a close approximation of what the finished piece will look like. Unlike a press proof, the prepress proof does not use the actual printing inks therefore color proofs may not be quite as accurate as a press proof.



A press proof is a proof from the printing press, plates, and actual inks specified for the job. A press proof is used to verify images, tone values, colors, and imposition. Because it involves setting up the job and running a proof on the actual paper to be used, it is normally done with the designer on-site (and sometimes your customer as well). It's your last chance to get it right and can add additional cost to the job.

Some types of printing proofs include blueline, Velox, Matchprint, color laser, and inkjet. Other general types of proofs are hard proofs (printed) and soft proofs (on-screen only), galley, reader, or imposition proofs (for checking general layout, order of pages, alignment, etc.) and contract proofs - the final proof (of whatever type) that the printer relies on to print the job.

Blueline Proof



Usually inexpensive, photographic proof from negatives where all colors are shown in blue (or another color) is called a blueline. The negatives used for the printing plates are exposed to a photosensitive paper to produce the image on the blueline. A blueline is a type of contact proof, so named because it is created by having the negative come in contact with a special type of paper.

Matchprint Proof

One of the more expensive but more accurate types of prepress proofs is the Matchprint. Although used generically to refer to any laminate analog color proof system, Matchprint is actually a brandname of both analog and digital proofing systems.

Velox Proof

Velox is a high contrast black and white paper used for print or proof purposes. When used generically Velox commonly refers to a positive photographic print made from a screen negative printed from a high-resolution imagesetter onto any resin coated paper.

BEFORE PRINTING:

By the time you get to a press check, typos should be fixed, and layout, font, and image choices finalized. Use the press proof or press check to confirm paper and ink colors and their interaction. Check for registration, page to page color printing / color consistency and the overall appearance of the type and the absence of stray marks or hickies.

Imposition

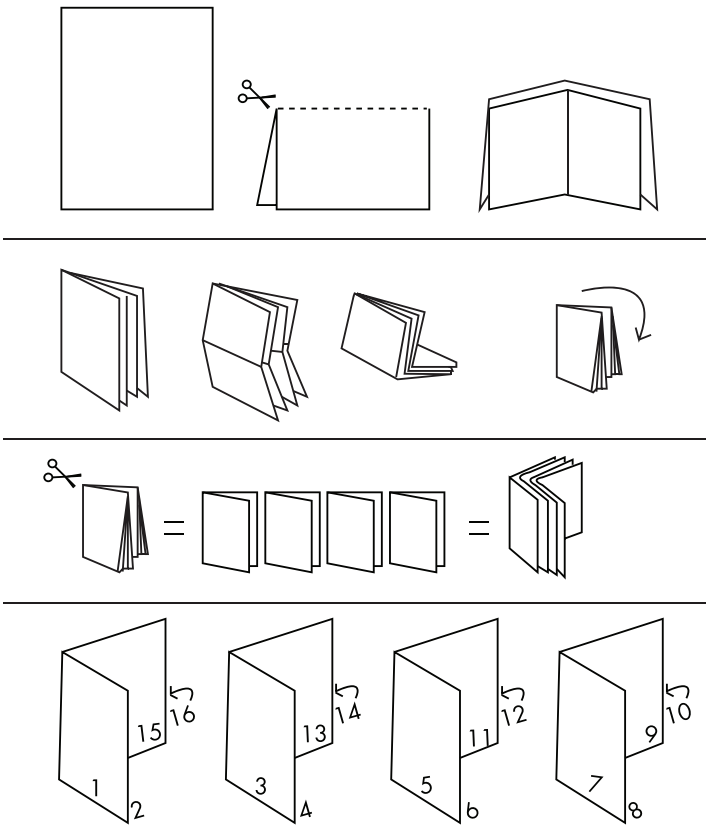
What Is Imposition?

The main function of imposition is to ensure that pages are printed efficiently and correctly. Though final imposition occurs once completed page layouts have passed the pre flighting stage, it is important to consider the final product's format, size, colors, and paper. Some basic forethought of imposition during the design stage will also save time later on.

For a designer, working out an imposition visually can be very beneficial. You may catch flaws in the layout, find more effective ways to print the project, and allow for the use of spot colors and special varnishes while keeping to a budget. Understanding effective imposition will also help you communicate with the printer.

The illustration shown here demonstrates the process that the designer should take into consideration when preparing printer spreads for prepress. This is a visual aid you could use to help you get an idea of how complex imposition can get when considering folds and binding methods. It's always a good idea to create a dummy version of your composition before printing the final finished version.

There are software programs available today that will automatically arrange your document correctly. Most corporate printing presses will have a knowledgeable staff member in place to take care of imposition for you. Small shops usually expect the designer to figure out the printer spread of his or her document layout. If you are ever in doubt, search the internet, ask a printing press specialist, or your school professor.



Imposition At A Glance

Printer spreads vs Reader spreads

Module A

Back Cover Page 8	Front Cover Page 1
Page 2	Page 7
Page 6	Page 3
Page 4	Page 5

Printer spread refers to the order of pages as they actually appear on paper for printing. Refer to Module A

Module B

Back	Front Cover Page 1
Page 2	Page 3
Page 4	Page 5
Back Cover Page 6	Blank

Reader spread refers to the order of pages as they actually appear after pages have been folded and bound. Refer to Module B.

Digital vs. Manual

Just as digital imaging has revolutionized graphic design, so too has it made its mark on the imposition process. Prior to the use of digital imposition, the process used to be done manually on photographic film. The film then had to be assembled by hand in the correct order and placement for printing. Using digital imposition via desktop computers greatly decreases the turn around time and is favored by prepress departments now. It's also more precise and decreases the possibility of errors that could result in having to reprint the job.

Planning

Questions for Planning Imposition

1. What kind of paper stock will it be printed on?
2. What is the size of the sheets used and how many pages can be printed on each sheet?
3. Will double-sided printing be needed?
4. How is it going to be cut, folded and/or trimmed?
5. What type of binding will be used?
6. Will a paper-creep allowance be needed to ensure margins are consistent?
7. Will spot colors or spot UV be used?

What Is Planning?

An imposition plan is a basic diagram of each page. This can demonstrate pagination, paper types, number of signatures, and color fall. Flatplans, sketches showing the layout of images and text, can also be used to identify potential problems with color usage or crossovers.

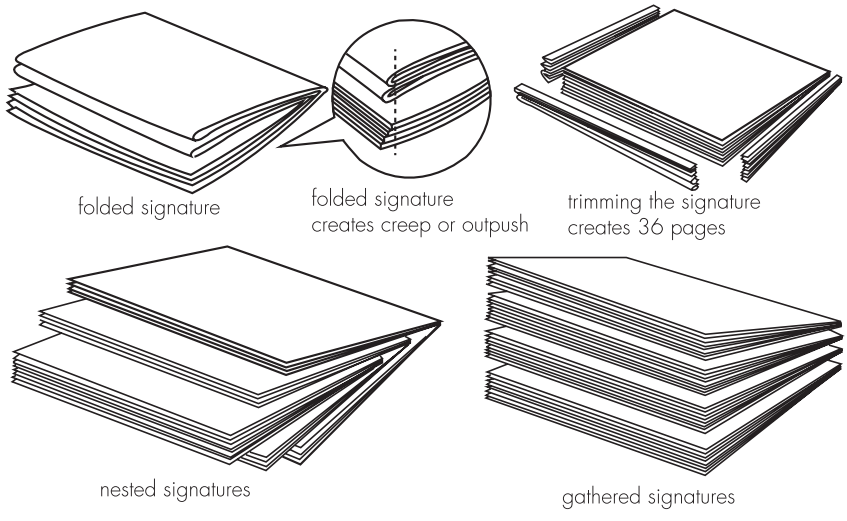
Designers can also benefit from creating a smaller version of the publication called a dummy. For folded publications in particular, a dummy can easily demonstrate which pages will need to be printed together and then folded. A folded signature will typically be printed as follows:

Paper Creep

Prepress must plan press sheets that fold into signatures due to creep, which occurs when folded signatures jut out unevenly on the sides of booklets, magazines, and other such publications. It is important to note that the binding method effects imposition as much as the designer's folding method. Creep is more likely with thick paper, several folds, multiple nested signatures positioned within each other.

TIP

It is good practice to make dummy copies of the your folding and binding methods.



WORDS TO KNOW

COLOR FALL: pages marked in an imposition plan for special colors and different paper selections

CROSSOVER: design, image, or text that extends across facing pages

DUMMY: miniature prototype of the product

FLATPLAN: layout sketch of pages and elements on each page

IMPOSITION: the planning and arrangement of pages as they will be printed before being cut, folded, and assembled

IMPOSITION PLAN: diagram of all pages in a publication indicating the layout; can also be used to show the paper choices, special colors, etc.

PAGINATION: sequence of pages in a publication

PAPER-CREEP ALLOWANCE: shifting margins slightly so they remain consistent after sheets are trimmed and assembled at the spine of a thick saddle-stitched book

PRINTING pass: sheet's movement through the printing press

PRINTER SPREAD: the order of pages as they actually appear on paper for printing

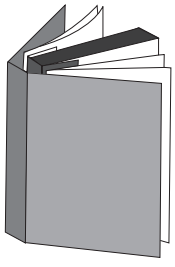
READER SPREAD: Reader spreads the order of pages as they actually appear after pages have been folded and bound

SIGNATURE: section of 16 pages in a publication

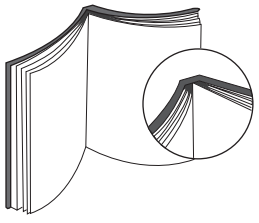
Page design by Christina Jones & Ronnel DeWeever

Binding

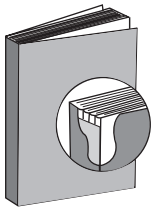
Binding is the term used for the different processes that are used to hold together the pages or sections of any publication to form a book, magazine, brochure or other format. Binding choices have a direct influence on the durability, functionality and cost of a publication, as well as adding to its visual qualities.



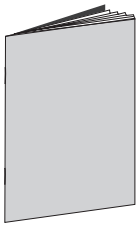
Case Binding
A durable method often used in the production of hardback books.



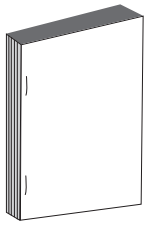
Perfect Binding
Perfect, or unsewn, binding is a method that is commonly used for magazines and paperback books.



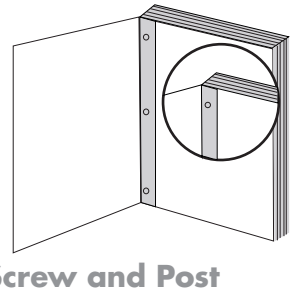
Burst Perfect
For this binding method signatures are sewn, then glued as with perfect binding



Saddle Stitching
Binding method that fastens the loose pages of a publication with wire stitches through the central fold.



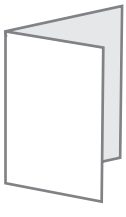
Side Stitching
Uses wire stitches to secure pages through the entire thickness of the text block to give additional strength.



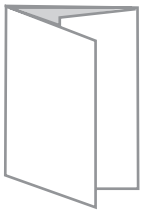
Screw and Post
Screw and post binding accommodates wide range and variety of materials. This method allows the user to remove and replace pages by removing the screws.

Self Binds

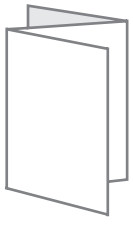
Such publications are described as self binds because the reader manually rebinds the publication after uing it by folding it again. Maps and brochures are typical examples of self binds.



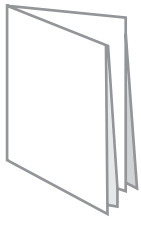
4 Page



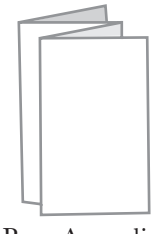
6 Page



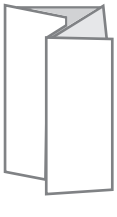
6 Page Accordion



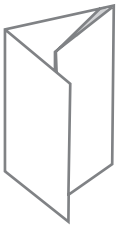
8 Page French Fold



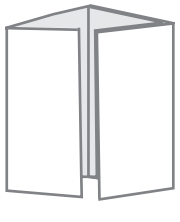
8 Page Accordion



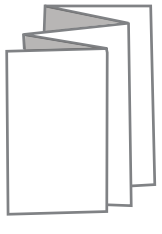
8 Page Map Fold



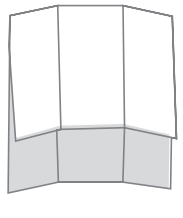
8 Page Parallel



8 Page Gate Fold



10 Page Reverse Map Fold

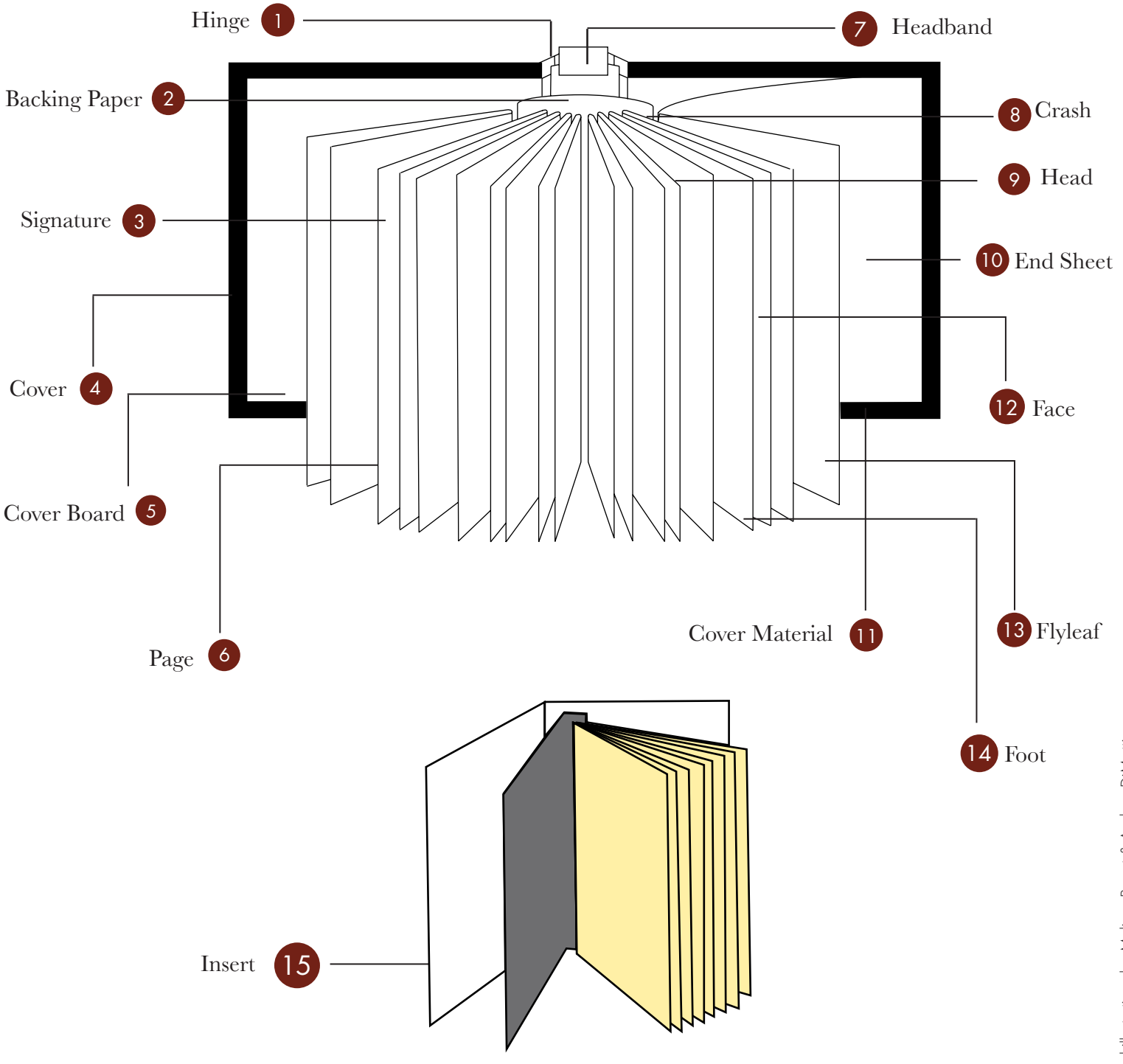


12 Page Broadside

design and illustrations by Tatiana Suare, Melissa Bonet, & Andrea DiMattia

Case Binding

Case-bindings are the common bindings for hardcover books. The pages are arranged in signatures, sewn together, and attached to a hard cover. The covers of case bound books can be made from many different materials such as leather, vinyl or cloth. Case binding can also be referred to as edition binding or case bound. This type of binding is also the most used type of binding for a book. It's mostly commonly used because of its sturdy assembly.



design and illustrations by Melissa Bonet & Andrea DiMattia

Postal Regulations

Design vs Postal Regulations

Direct mail remains one of the most powerful marketing vehicles for businesses large and small. In fact, 78 percent of small businesses rely on print communications and direct mail to communicate with their target audiences. The challenge is to design your mailing for consumer impact and Postal Service™ approval. If you are not an expert in USPS mailing regulations, look inside for some helpful hints that can save you time and money.

PRINT MORE. PAY LESS.
When you plan ahead, you'll be thrilled with how much you can save.

Consult your Print facility early in the design stage of your project. Making design changes late can be painfully expensive.
The experts can help you with:

- paper choices
- color options
- size and format of mailer
- setting design parameters for postal discounts

For more information on smart designing, or answers to other printing questions, contact your staff of experts at your local print shop.
Check out the U.S. Postal Service™ Web site, www.usps.com, for detailed information on mailing services. You can also consult the Domestic Mail Manual and other U.S. Postal Service™ publications available at your local branch post office.

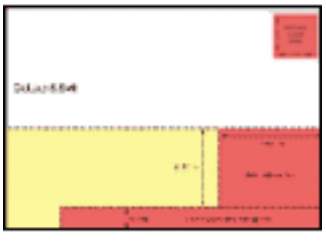
When designing direct mail, postcards, or other materials that will be mailed, it is important to consider the postal regulations for a particular piece. Paper choice, thickness, and glossiness is also something to think about. Knowing postal regulations can help you design a mail piece in a way that will prevent wear and tear.

- Need to know the mailing guidelines for postcards?
- Want to know if you need a protective coating on your artwork?
- Is your paper choice too thick for postal machines?

Knowing where the file will be printed before starting any design is highly important, since it will affect what colors you can & can't use

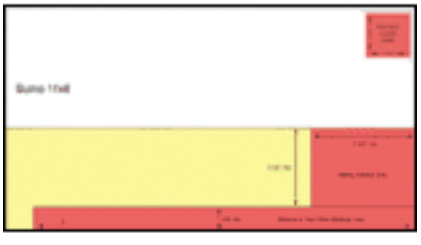
Brochure

Standard
Greeting Card
Triple Standard



Deluxe
Double Deluxe
Triple Deluxe

5" x 7"
Double 5" x 7"
Triple 5" x 7"



Sumo®
Double Sumo®
Triple Sumo℠

modernpostcard.com

YELLOW ZONE - No addresses with a Zip Code & State. This will eliminate the risk of your postcards being returned to you by the Postal automation process. If necessary, an address can be placed in this area if it does not contain a state or zip code. The Post Office will scan this entire area for recipient addresses and zip codes.

RED ZONE - No text/graphics greater than 7% grayscale. The only text allowed in the addressing area is the recipient mailing address. We recommend following this guide if you are designing your own card. If you are mailing your cards, this guide must be followed.

Mailing Standards of the United States Postal Service
Domestic Mail Manual

http://pe.usps.com/text/dmm300/dmm300_landing.htm

Designing for Postal Regulations

Designing for Production

To make every dollar count, you need to begin considering costs at the concept stage of a print project. Here are several suggestions:

• Designing an unusual format usually results in running up unusual costs. A brochure with non- standard dimensions may require an expensive custom-made envelope. There is a clear advantage to working with standard paper sizes.

• Avoid using bleeds (when the ink goes off the edge of the paper without leaving a border). This can add five to ten percent to the cost of your printing order.

• Carefully weigh the value of your choices. For instance, limiting yourself to black ink on white paper will save money. But adding one or two colors can create impact and interest that more than offset the modest cost.

• Consider ways to design and prepare your direct mail that can reduce postage costs.

Save Money with Design

Keep in mind that the U.S. Postal Service™ wants you to prepare your mail for automated processing so that your mail is delivered quickly and accurately. To that end, design, packaging, preparation, bar coding and presorting are all key factors. To receive an automated mail discount, every piece in your flat mailing must be 100 percent automated.

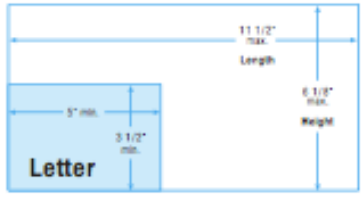
The post office also gives significant discounts for drop shipping to a bulk mailing center or a sectional center facility.

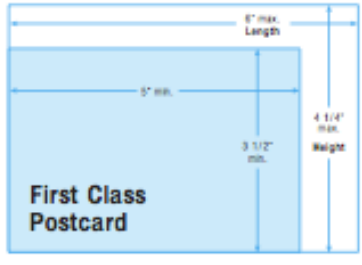
CAREFULLY WEIGH YOUR OPTIONS. Everyone loves to save money, but don't sacrifice quality and impact for a few dollars.

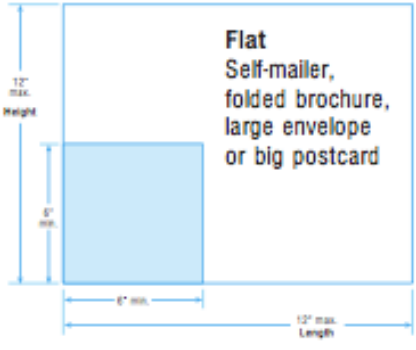
You can and should change your color settings for all adobe products within the creative Suite color settings box of adobe Bridge, which is under the edit menu.

Check your Specs

To avoid paying extra charges, design your mailing to fit within the size specifications laid out by the USPS. Postcards, letters and flats all have standard dimensions that need to be adhered to. Response cards and envelopes also have precise specifications.







allegranetwork.com

All nonprofits qualify for the same postal discounts available to regular organizations and businesses. However, certain nonprofits are authorized by the U.S. Postal Service™ to receive additional savings on postage rates. Usage of nonprofit rates depends both on the organization's eligibility and whether the content of the mailing meets federal statutes.

To qualify for low nonprofit rates, an organization must submit Form 3624 to the USPS and fit into one of these eight categories:

- Agricultural
- Philanthropic
- Educational
- Labor
- Scientific
- Veterans
- Religious
- Fraternal

Page Design by: German Blanco

ADDITIVE_COLOR Color produced by light falling onto a surface, as compared to subtractive color. The additive primary colors are red, green and blue.

AGAINST_THE_GRAIN At right angles to the grain direction of the paper being used, as compared to with the grain. Also called across the grain and cross grain. See also Grain Direction.

AQUEOUS_COATING Coating in a water base and applied like ink by a printing press to protect and enhance the printing underneath.

BACK_UP (1) To print on the second side of a sheet already printed on one side. (2) To adjust an image on one side of a sheet so that it aligns back-to-back with an image on the other side.

BASIS_WEIGHT In the United States and Canada, the weight, in pounds, of a ream (500 sheets) of paper cut to the basic size. Also called ream weight and substance weight (sub weight). In countries using ISO paper sizes, the weight, in grams, of one square meter of paper. Also called grammage and ream weight.

BIBLE_PAPER Very thin, opaque paper used for products such as bibles and dictionaries. Also called India paper.

BIND Usually in the book arena, but not exclusively, the joining of leafs or signatures together with either wire, glue or other means.

BLANKET Rubber-coated pad, mounted on a cylinder of an offset press, that receives the inked image from the plate and transfers it to the surface to be printed.

BLEED Printing that extends to the edge of a sheet or page after trimming.

BLIND_IMAGE Image debossed, embossed or stamped, but not printed with ink or foil.

BLUELINE Prepress proof made where all colors show as blue images on white paper. "Blueline" is a generic term for proofs made from a variety of materials having similar appearances that may also be called position proof, silverprint, Dylux, and VanDyke.

BRONZING The effect produced by dusting wet ink after printing and using a metallic powder.

BUILD-A-COLOR To overlap two or more screen tints to create a new color. Such an overlap is called a build, color build, stacked screen build or tint build.

BULK Thickness of paper relative to its basic weight.

BURN To expose a printing plate to light.

BURST-PERFECT-BIND To bind by forcing glue into notches along the spines of gathered signatures before affixing a paper cover. Also called burst bind, notch bind and slotted bind.

BUY_OUT To subcontract for a service Calender To make the surface of paper smooth by pressing it between rollers during manufacturing.

CALIPER (1) Thickness of paper or other substrate expressed in thousandths of an inch (mils or points), pages per inch (ppi), thousandths of a millimeter (microns) or pages per centimeter (ppc). (2) Device on a sheetfed press that detects double sheets or on a binding machine that detects missing signatures or inserts.

CAMERA-READY_COPY Mechanicals, photographs and art fully prepared for reproduction according to the technical requirements of the printing process being used. Also called finished art and reproduction copy.

CARBONLESS_PAPER Paper coated with chemicals that enable transfer of images from one sheet to another with pressure from writing or typing.

CHALKING Deterioration of a printed image caused by ink that absorbs into paper too fast or has long exposure to sun, and wind making printed images look dusty. Also called crocking.

CHOKE Technique of slightly reducing the size of an image to create a hairline trap or to outline. Also called shrink and skinny.

CHROMA Strength of a color as compared to how close it seems to neutral gray. Also called depth, intensity, purity and saturation.

CMYK Abbreviation for cyan, magenta, yellow and key (black), the four process colors.

COATED_PAPER Paper with a coating of clay and other substances that improves reflectivity and ink holdout. Mills produce coated paper in the four major categories cast, gloss, dull and matte.

COLLATE To organize printed matter in a specific order as requested.

COLLATING_MARKS Mostly in the book arena, specific marks on the back of signatures indicating exact position in the collating stage.

COLOR_BALANCE Refers to amounts of process colors that simulate the colors of the original scene or photograph.

COLOR_BREAK In multicolor printing, the point, line or space at which one ink color stops and another begins.

COLOR_CAST Unwanted color affecting an entire image or portion of an image.

COLOR_CONTROL_BAR Strip of small blocks of color on a proof or press sheet to help evaluate features such as density and dot gain. Also called color bar, color guide and standard offset color bar.

COLOR_CORRECT To adjust the relationship among the process colors to achieve desirable colors.

COLOR_CURVES Instructions in computer software that allow users to change or correct colors. Also called HLS and HVS tables.

COLOR_GAMUT The entire range of hues possible to reproduce using a specific device, such as a computer screen, or system, such as four-color process printing.

COLOR_SEPARATION (1) Technique of using a camera, scanner or computer to divide continuous-tone color images into four halftone negatives. (2) The product resulting from color separating and subsequent four-color process printing.

COLOR_SEQUENCE Order in which inks are printed. With process colors, the sheetfed sequence is often black first, then magenta, cyan, and yellow last. The web sequence is often cyan, magenta, yellow, and black either first or last. Also called letdown sequence and rotation.

COLOR_SHIFT Change in image color resulting from changes in register, ink densities or dot gain during four-color process printing.

COMB_BIND To bind by inserting the teeth of a flexible plastic comb through holes punched along the edge of a stack of paper. Also called plastic bind and GBC bind (a brand name).

COMMERCIAL_PRINTER Printer producing a wide range of products such as announcements, brochures, posters, booklets, stationery, business forms, books and magazines. Also called job printer because each job is different.

COMPOSITE_PROOF Proof of color separations in position with graphics and type. Also called final proof, imposition proof and stripping proof.

CONDITION To keep paper in the pressroom for a few hours or days before printing so that its moisture level and temperature equal that in the pressroom. Also called cure, mature and season.

CONTINUOUS-TONE_COPY All photographs and those illustrations having a range of shades not made up of dots, as compared to line copy or halftones. Abbreviated contone.

CONVERTER Business that makes products such as boxes, bags, envelopes and displays.

COVER_PAPER Category of thick paper used for products such as posters, menus, folders and covers of paperback books.

CRASH Coarse cloth embedded in the glue along the spine of a book to increase strength of binding. Also called gauze, mull and scrim.

CREEP Phenomenon of middle pages of a folded signature extending slightly beyond outside pages. Also called feathering, outpush, push out and thrust.

CROP_MARKS Lines near the edges of an image indicating portions to be reproduced. Also called cut marks and tic marks.

CROSSOVER Type or art that continues from one page of a book or magazine across the gutter to the opposite page. Also called bridge, gutter bleed and gutter jump.

CURE To dry inks, varnishes or other coatings after printing to ensure good adhesion and prevent setoff.

DEBOSS To press an image into paper so it lies below the surface.

DECKLE_EDGE Edge of paper left ragged as it comes from the papermaking machine instead of being cleanly cut. Also called feather edge.

DENSITY (1) Regarding ink, the relative thickness of a layer of printed ink. (2) Regarding color, the relative ability of a color to absorb light reflected from it or block light passing through it. (3) Regarding paper, the relative tightness or looseness of fibers.

DEVICE_INDEPENDENT_COLORS Hues identified by wavelength or by their place in systems such as developed by CIE. 'Device independent' means a color can be described and specified without regard to whether it is reproduced using ink, projected light, photographic chemistry or any other method.

DIE_CUT To cut irregular shapes in paper or paperboard using a die.

DOT_GAIN Phenomenon of halftone dots printing larger on paper than they are on films or plates, reducing detail and lowering contrast. Also called dot growth, dot spread and press gain.

DOTS-PER-INCH Measure of resolution of input devices such as scanners, display devices such as monitors, and output devices such as laser printers, imagesetters and monitors. Abbreviated DPI. Also called dot pitch.

DOUBLE_BLACK_DUOTONE Duotone printed from two halftones, one shot for highlights and the other shot for midtones and shadows.

DOUBLE_BUMP To print a single image twice so it has two layers of ink.

DOUBLING Printing defect appearing as blurring or shadowing of the image. Doubling may be caused by problems with paper, cylinder alignment, blanket pressures or dirty cylinders.

DPI Considered as "dots per square inch," a measure of output resolution in relationship to printers, imagesetters and monitors.

DRAWDOWN Sample of inks specified for a job applied to the substrate specified for a job. Also called pulldown.

DROPOUT Halftone dots or fine lines eliminated from highlights by overexposure during camera work. The lost copy is said to have dropped out.

DUOTONE Black-and-white photograph reproduced using two halftone negatives, each shot to emphasize different tonal values in the original.

EMBOSS To press an image into paper so it lies above the surface. Also called cameo and tool.

EMULSION Casting of light-sensitive chemicals on papers, films, printing plates and stencils.

EMULSION_DOWN/UP Film whose emulsion side faces down (away from the viewer) or up (toward the viewer) when ready to make a plate or stencil. Abbreviated ED, EU.

ENGRAVING Printing method using a plate, also called a die, with an image cut into its surface.

EPS Encapsulated Post Script, a known file format usually used to transfer post script information from one program to another.

EQUIVALENT_PAPER Paper that is not the brand specified, but looks, prints and may cost the same. . Also called comparable stock.

ESTIMATE Price that states what a job will probably cost. Also called bid, quotation and tender.

ETCH To use chemicals to carve an image into metal, glass or film.

FIXED_COSTS Costs that remain the same regardless of how many pieces are printed. Copyrighting, photography and design are fixed costs.

FLAT_COLOR (1) Any color created by printing only one ink, as compared to a color created by printing four-color process. Also called block color and spot color. (2) color that seems weak or lifeless.

FLAT Stripped film ready for platemaking.

FLEXOGRAPHY Method of printing on a web press using rubber or plastic plates with raised images. Also called aniline printing because flexographic inks originally used aniline dyes. Abbreviated flex.

FLOOD To print a sheet completely with an ink or varnish. flooding with ink is also called painting the sheet.

FOIL_STAMP Method of printing that releases foil from its backing when stamped with the heated die. Also called block print, hot foil stamp and stamp.

FOR_POSITION_ONLY Refers to inexpensive copies of photos or art used on mechanical to indicate placement and scaling, but not intended for reproduction. Abbreviated FPO.

FOUNTAIN_SOLUTION Mixture of water and chemicals that dampens a printing plate to prevent ink from adhering to the nonimage area. Also called dampener solution.

FOUR-COLOR_PROCESS_PRINTING Technique of printing that uses black, magenta,

cyan and yellow to simulate full-color images. Also called color process printing, full color printing and process printing.

FREE_SHEET Paper made from cooked wood fibers mixed with chemicals and washed free of impurities, as compared to groundwood paper. Also called woodfree paper.

GANG (1) To halftone or separate more than one image in only one exposure. (2) To reproduce two or more different printed products simultaneously on one sheet of paper during one press run. Also called combination run.

GATHERED Signatures assembled next to each other in the proper sequence for binding, as compared to nested. Also called stacked.

GRADUATED_SCREEN_TINT Screen tint that changes densities gradually and smoothly, not in distinct steps. Also called degrade, gradient, ramped screen and vignette.

GRAIN_DIRECTION Predominant direction in which fibers in paper become aligned during manufacturing. Also called machine direction.

GRAIN_LONG/SHORT_PAPER Paper whose fibers run parallel to the long/short dimension of the sheet.

GRAVURE Method of printing using metal cylinders etched with millions of tiny wells that hold ink.

GRAY_BALANCE Printed cyan, magenta and yellow halftone dots that accurately, reproduce a neutral gray image.

GRAY_COMPONENT_REPLACEMENT Technique of replacing gray tones in the yellow, cyan and magenta films, made while color separating, with black ink. Abbreviated GCR. Also called achromatic color removal.

GRAY_LEVELS Number of distinct gray tones that can be reproduced by a computer.

GRIPPER_EDGE Edge of a sheet held by grippers on a sheetfed press, thus going first through the press. Also called feeding edge and leading edge.

GSM The unit of measurement for paper weight (grams per square meter).

GUTTER In the book arena, the inside margins toward the back or the binding edges.

HAIRLINE Subjective term referring to very small space, thin line or close register.

HALFTONE (1) To photograph or scan a continuous tone image to convert the image into halftone dots. (2) A photograph or continuous-tone illustration that has been halftoned and appears on film, paper, printing plate or the final printed product.

HEAT-SET_WEB Web press equipped with an oven to dry ink, thus able to print coated paper.

HICKEY Spot or imperfection in printing, most visible in areas of heavy ink coverage, caused by dirt on the plate or blanket. Also called bulls eye and fish eye.

HOUSE_SHEET Paper kept in stock by a printer and suitable for a variety of printing jobs. Also called floor sheet.

IMAGESETTER Laser output device using photosensitive paper or film.

IMAGE_TRAP Slight overlapping of images to ensure they appear registered.

IMPOSITION Arrangement of pages on mechanicals or flats so they will appear in proper sequence after press sheets are folded and bound.

IMPRESSION (1) Referring to an ink color, one impression equals one press sheet passing once through a printing unit. (2) Referring to speed of a press, one impression equals one press sheet passing once through the press.

IMPRESSION_CYLINDER Cylinder, on a press, that pushes paper against the plate or blanket, thus forming the image. Also called impression roller.

IMPRINT To print new copy on a previously printed sheet, such as imprinting an employee's name on business cards. Also called surprint.

INK_BALANCE Relationship of the densities and dot gains of process inks to each other and to a standard density of neutral gray.

INK_FOUNTAIN Reservoir, on a printing press, that holds ink.

INK_HOLDOUT Characteristic of paper that prevents it from absorbing ink, thus allowing ink to dry on the surface of the paper. Also called holdout.

INK_JET_PRINTING Method of printing by spraying droplets of ink through computer-controlled nozzles.

INK_TRAP Ink printed over a previously printed image.

JOB_TICKET Form used by service bureaus, separators and printers to specify production schedule of a job and the materials it needs. Also called docket, production order and work order.

KEYLINES Lines on a mechanical or negative showing the exact size, shape and location of photographs or other graphic elements. Also called holding lines.

LAY-FLAT_BIND Method of perfect binding that allows a publication to lie fully open.

LETTERPRESS Method of printing from raised surfaces, either metal type or plates whose surfaces have been etched away from image areas. Also called block printing.

LITHOGRAPHY Method of printing using plates whose image areas attract ink and whose nonimage areas repel ink. Nonimage areas may be coated with water to repel the oily ink or may have a surface, such as silicon, that repels ink.

M_WEIGHT Weight of 1,000 sheets of paper in any specific size.

MAKEREADY (1) All activities required to prepare a press or other machine to function for a specific printing or bindery job, as compared to production run. Also called setup. (2) Paper used in the makeready process at any stage in production. Makeready paper is part of waste or spoilage.

MASK To prevent light from reaching part of an image, therefore isolating the remaining part. Also called knock out.

MATCH_PRINT A form of a four-color-process proofing system.

MECHANICAL_CAMERA-READY assembly of type, graphic and other copy complete with instructions to the printer. Also called an artboard and pasteup.

MOCK_UP A reproduction of the original printed matter and possibly containing instructions or direction.

MOIRE Undesirable pattern resulting when halftones and screen tints are made with improperly aligned screens, or when a pattern in a photo, such as a plaid, interfaces with a halftone dot pattern.

NESTED_SIGNATURES assembled inside one another in the proper sequence for binding, as compared to gathered. Also called inset.

NON-HEATSET_WEB Web press without a

drying oven, thus not able to print on coated paper. Also called cold-set web and open web.

NONIMPACT-PRINTING Printing using lasers, ions, ink jets or heat to transfer images to paper.

OFFSET_PRINTING Printing technique that transfers ink from a plate to a blanket to paper instead of directly from plate to paper.

OPACITY (1) Characteristic of paper or other substrate that prevents printing on one side from showing through the other side. (2) Characteristic of ink that prevents the substrate from showing through.

ONION_SKIN A specific lightweight type (kind) of paper usually used in the past for air mail. Seldom used today (in the typewriter era).

OVERLAY_PROOF Color proof consisting of polyester sheets laid on top of each other with their image in register, as compared to integral proof. Each sheet represents the image to be printed in one color. Also called celluloid proof and layered proof.

PAGE_PROOF Proof of type and graphics as they will look on the finished page complete with elements such as headings, rules and folios.

PAGINATION In the book arena, the numbering of pages.

PAINTED_SHEET Sheet printed with ink edge to edge, as compared to spot color. The painted sheet refers to the final product, not the press sheet, and means that 100 percent coverage results from bleeds off all four sides.

PASTE-UP To paste copy to mounting boards and, if necessary, to overlays so it is assembled into a camera-ready mechanical. The mechanical produced is often called a paste-up.

PERFECT_BIND To bind sheets that have been ground at the spine and are held to the cover by glue. Also called adhesive bind, cut-back bind, glue bind, paper bind, patent bind, perfecting bind, soft bind and soft cover. See also Burst Perfect Bind.

PERFECTING_PRESS Press capable of printing both sides of the paper during a single pass. Also called duplex press and perfector.

PERFORATING Taking place on a press or a binder machine, creating a line of small dotted wholes for the purpose of tearing-off a part of a printed matter (usually straight lines, vertical or horizontal).

PIN_REGISTER Technique of registering separations, flats and printing plates by using small holes, all of equal diameter, at the edges of both flats and plates.

PLATE Piece of paper, metal, plastic or rubber carrying an image to be reproduced using a printing press.

PLATE-READY_FILM Stripped negatives or positives fully prepared for platemaking.

PLEASING_COLOR Color that the customer considers satisfactory even though it may not precisely match original samples, scenes or objects.

PMS Obsolete reference to Pantone Matching System. The correct trade name of the colors in the Pantone Matching System is Pantone colors, not PMS Colors.

POST_BIND To bind using a screw and post inserted through a hole in a pile of loose sheets.

PREPRESS Camera work, color separations, stripping, platemaking and other prepress functions performed by the printer, separator or a service bureau prior to printing. Also called preparation.

PRESS_PROOF Proof made on press using the plates, ink and paper specified for the job. Also called strike off and trial proof.

PRINTER_SPREADS Mechanicals made so they are imposed for printing, as compared to reader spreads.

PRINTING_UNIT Assembly of fountain, rollers and cylinders that will print one ink color. Also called color station, deck, ink station, printer, station and tower.

PROCESS_COLORS The colors used for four-color process printing: yellow, magenta, cyan and black.

PROOF Test sheet made to reveal errors or flaws, predict results on press and record how a printing job is intended to appear when finished.

QUICK_PRINTING Printing using small sheetfed presses, called duplicators, using cut sizes of bond and offset paper.

RAG_PAPER Stationery or other forms of stock having a strong percentage content of "cotton rags."

RAINBOW_FOUNTAIN Technique of putting ink colors next to each other in the same ink fountain and oscillating the ink rollers to make the colors merge where they touch, producing a rainbow effect.

RASTER_IMAGE_PROCESSOR Device that translates page description commands into bitmapped information for an output device such as a laser printer or imagesetter.

READER_SPREAD Mechanicals made in two page spreads as readers would see the pages, as compared to printer spread.

REAM 500 sheets of paper.

REFLECTIVE_COPY Products, such as fabrics, illustrations and photographic prints, viewed by light reflected from them, as compared to transparent copy. Also called reflex copy.

REGISTER_MARKS Cross-hair lines on mechanicals and film that help keep flats, plates, and printing in register. Also called crossmarks and position marks.

RELIEF_PRINTING Printing method whose image carriers are surfaces with two levels having inked areas higher than noninked areas. Relief printing includes block printing, flexography and letter press.

REPEATABILITY Ability of a device, such as an imagesetter, to produce film or plates that yield images in register.

REPROGRAPHICS General term for xerography, diazo and other methods of copying used by designers, engineers, architects or for general office use.

REVERSE Type, graphic or illustration reproduced by printing ink around its outline, thus allowing the underlying color or paper to show through and form the image. The image 'reverses out' of the ink color. Also called knockout.

RGB Abbreviation for red, green, blue, the additive color primaries.

RIGHT_READING Copy that reads correctly in the language in which it is written. Also describes a photo whose orientation looks like the original scene, as compared to a flopped image.

ROUND_BACK_BIND To case bind with a rounded (convex) spine, as compared to flat back bind.

SADDLE_STITCH To bind by stapling sheets together where they fold at the spine, as compared to side stitch. Also called pamphlet stitch, saddle wire and stitch bind.

SATIN_FINISH Alternate term for dull finish on coated paper.

SCORE To compress paper along a straight line so it folds more easily and accurately. Also called crease.

SCREEN_ANGLES Angles at which screens intersect with the horizontal line of the press sheet. The common screen angles for separations are black 45 degree, magenta 75 degree, yellow 90 degree and cyan 105 degree.

SCREEN_DENSITY Refers to the percentage of ink coverage that a screen tint allows to print (dot area). Also called screen percentage.

SCREEN_PRINTING Method of printing by using a squeegee to force ink through an assembly of mesh fabric and a stencil.

SCREEN_RULING Number of rows or lines of dots per inch or centimeter in a screen for making a screen tint or halftone. Also called line count, ruling, screen frequency, screen size and screen value.

SCREEN_TINT Color created by dots instead of solid ink coverage. Also called Benday, fill pattern, screen tone, shading, tint and tone.

SELF_MAILER A printed item independent of an envelope. A printed item capable of travel in the mailing arena independently.

SHEETFED_PRESS Press that prints sheets of paper, as compared to a web press.

SHEETWISE Technique of printing one side of a sheet with one set of plates, then the other side of the sheet with a set of different plates. Also called work and back.

SHINGLING Allowance, made during paste-up or stripping, to compensate for creep. Creep is the problem; shingling is the solution. Also called stair stepping and progressive margins.

SIDE_STITCH To bind by stapling through sheets along, one edge, as compared to saddle stitch. Also called cleat stitch and side wire.

SIGNATURE Printed sheet folded at least once, possibly many times, to become part of a book, magazine or other publication.

SOY-BASED_INKS Inks using vegetable oils instead of petroleum products as pigment vehicles, thus are easier on the environment.

SPECULAR_HIGHLIGHT Highlight area with no printable dots, thus no detail, as compared to a diffuse highlight. Also called catchlight and dropout highlight.

SPINE Back or binding edge of a publication

SPIRAL_BIND To bind using a spiral of continuous wire or plastic looped through holes. Also called coil bind.

SPLIT_FOUNTAIN Technique of putting ink colors next to each other in the same ink fountain and printing them off the same plate. Split fountains keep edges of colors distinct, as compared to rainbow fountains that blend edges.

SPLIT_RUN (1) Different images, such as advertisements, printed in different editions of a publication. (2) Printing of a book that has some copies bound one way and other copies bound another way.

SPOILAGE Paper that, due to mistakes or accidents, must be thrown away instead of delivered printed to the customer, as compared to waste.

SPOT_COLOR or Varnish One ink or varnish applied to portions of a sheet, as compared to flood or painted sheet.

SPREAD (1) Two pages that face each other and are designed as one visual or production unit. (2) Technique of slightly enlarging the size of an image to accomplish a hairline trap with another image. Also called fatty.

STEP_AND_REPEAT Prepress technique of exposing an image in a precise, multiple pattern to create a flat or plate. Images are said to be stepped across the film or plate.

STRIP To assemble images on film for platemaking. Stripping involves correcting flaws in film, assembling pieces of film into flats and ensuring that film and flats register correctly. Also called film assembly and image assembly.

SUBTRACTIVE_COLOR Color produced by light reflected from a surface, as compared to additive color. Subtractive color includes hues in color photos and colors created by inks on paper.

SUBTRACTIVE_PRIMARY_COLOR Yellow, magenta and cyan. In the graphic arts, these are known as process colors because, along with black, they are the inks colors used in color-process printing.

SUPERCALENDERED_PAPER Paper calendered using alternating chrome and fiber rollers to produce a smooth, thin sheet. Abbreviated SC paper.

SADDLE_STITCH To bind by stapling sheets together where they fold at the spine, as compared to side stitch. Also called pamphlet stitch, saddle wire and stitch bind.

SATIN_FINISH Alternate term for dull finish on coated paper.

SCORE To compress paper along a straight line so it folds more easily and accurately. Also called crease.

SCREEN_ANGLES Angles at which screens intersect with the horizontal line of the press sheet. The common screen angles for separations are black 45 degree, magenta 75 degree, yellow 90 degree and cyan 105 degree.

SCREEN_DENSITY Refers to the percentage of ink coverage that a screen tint allows to print (dot area). Also called screen percentage.

SCREEN_PRINTING Method of printing by using a squeegee to force ink through an assembly of mesh fabric and a stencil.

SCREEN_RULING Number of rows or lines of dots per inch or centimeter in a screen for making a screen tint or halftone. Also called line count, ruling, screen frequency, screen size and screen value.

SCREEN_TINT Color created by dots instead of solid ink coverage. Also called Benday, fill pattern, screen tone, shading, tint and tone.

SELF_MAILER A printed item independent of an envelope. A printed item capable of travel in the mailing arena independently.

SHEETFED_PRESS Press that prints sheets of paper, as compared to a web press.

SHEETWISE Technique of printing one side of a sheet with one set of plates, then the other side of the sheet with a set of different plates. Also called work and back.

SHINGLING Allowance, made during paste-up or stripping, to compensate for creep. Creep is the problem; shingling is the solution. Also called stair stepping and progressive margins.

SIDE_STITCH To bind by stapling through sheets along, one edge, as compared to saddle stitch. Also called cleat stitch and side wire.

SIGNATURE Printed sheet folded at least once, possibly many times, to become part of a book, magazine or other publication.

SOY-BASED_INKS Inks using vegetable oils instead of petroleum products as pigment vehicles, thus are easier on the environment.

SPECULAR_HIGHLIGHT Highlight area with no printable dots, thus no detail, as compared to a diffuse highlight. Also called catchlight and dropout highlight.

SPINE Back or binding edge of a publication

SPIRAL_BIND To bind using a spiral of continuous wire or plastic looped through holes. Also called coil bind.

SPLIT_FOUNTAIN Technique of putting ink colors next to each other in the same ink fountain and printing them off the same plate. Split fountains keep edges of colors distinct, as compared to rainbow fountains that blend edges.

SPLIT_RUN (1) Different images, such as advertisements, printed in different editions of a publication. (2) Printing of a book that has some copies bound one way and other copies bound another way.

SPOILAGE Paper that, due to mistakes or accidents, must be thrown away instead of delivered printed to the customer, as compared to waste.

SPOT_COLOR or Varnish One ink or varnish applied to portions of a sheet, as compared to flood or painted sheet.

SPREAD (1) Two pages that face each other and are designed as one visual or production unit. (2) Technique of slightly enlarging the size of an image to accomplish a hairline trap with another image. Also called fatty.

STEP_AND_REPEAT Prepress technique of exposing an image in a precise, multiple pattern to create a flat or plate. Images are said to be stepped across the film or plate.

STRIP To assemble images on film for platemaking. Stripping involves correcting flaws in film, assembling pieces of film into flats and ensuring that film and flats register correctly. Also called film assembly and image assembly.

SUBTRACTIVE_COLOR Color produced by light reflected from a surface, as compared to additive color. Subtractive color includes hues in color photos and colors created by inks on paper.

SUBTRACTIVE_PRIMARY_COLOR Yellow, magenta and cyan. In the graphic arts, these are known as process colors because, along with black, they are the inks colors used in color-process printing.

SUPERCALENDERED_PAPER Paper calendered using alternating chrome and fiber rollers to produce a smooth, thin sheet. Abbreviated SC paper.

SWASH_BOOK A book in a variety of forms, indicating specific stock in specific colors in a specific thickness.

SWOP Abbreviation for specifications for web offset publications, specifications recommended for web printing of publications.

SWASH_BOOK A book in a variety of forms, indicating specific stock in specific colors in a specific thickness.

SWOP Abbreviation for specifications for web offset publications, specifications recommended for web printing of publications.

TEXT_PAPER Designation for printing papers with textured surfaces such as laid or linen. Some mills also use 'text' to refer to any paper they consider top-of-the-line, whether or not its surface has a texture.

THERMOGRAPHY Method of printing using colorless resin powder that takes on the color of underlying ink. Also called raised printing.

TINT Screening or adding white to a solid color for results of lightening that specific color.

TONE_COMPRESSION Reduction in the tonal range from original scene to printed reproduction.

TOTAL_AREA_COVERAGE Total of the dot percentages of the process colors in the final film. Abbreviated for TAC. Also called density of tone, maximum density, shadow saturation, total dot density and total ink coverage.

TOUCH_PLATE Plate that accents or prints a color that four-color process printing cannot reproduce well enough or at all. Also called kiss plate.

TRAP To print one ink over another or to print a coating, such as varnish, over an ink. The first liquid traps the second liquid. See also Dry Traps and Wet Traps.

UNCOATED_PAPER Paper that has not been coated with clay. Also called offset paper.

UNDERCOLOR ADDITION Technique of making color separations that increases the amount of cyan, magenta or yellow ink in shadow areas. Abbreviated UCA.

UNDERCOLOR_REMOVAL Technique of making color separations such that the amount of cyan, magenta and yellow ink is reduced in midtone and shadow areas while the amount of black is increased. Abbreviated UCR.

UNSHARP_MASKING Technique of adjusting dot size to make a halftone or separation appear sharper (in better focus) than the original photo or the first proof. Also called edge enhancement and peaking.

UP Term to indicate multiple copies of one image printed in one impression on a single sheet. "Two up" or "three up" means printing the identical piece twice or three times on each sheet.

UV_COATING Liquid applied to a printed sheet, then bonded and cured with ultraviolet light.

VARNISH Liquid applied as a coating for protection and appearance.

VELLUM_FINISH Somewhat rough, toothy finish.

VIGNETTE Decorative design or illustration fade to white.

VIRGIN_PAPER Paper made exclusively of pulp from trees or cotton, as compared to recycled paper.

WASH-UP To clean ink and fountain solutions from rollers, fountains, screens, and other press components.

WASTE Unusable paper or paper damage during normal makeready, printing or binding operations, as compared to spoilage.

WATERMARK Translucent logo in paper created during manufacturing by slight embossing from a dandy roll while paper is still approximately 90 percent water.

WEB_PRESS Press that prints from rolls of paper, usually cutting it into sheets after printing. Also called reel-fed press.

WITH_THE_GRAIN Parallel to the grain direction of the paper being used, as compared to against the grain. See also Grain Direction.

WOODFREE Paper Made with chemical pulp only. Paper usually classified as calendered or supercalendered.

WOVE Paper manufactured without visible wire marks, usually a fine textured paper.

WRONG_READING An image that is backwards when compared to the original. Also called flopped and reverse reading.