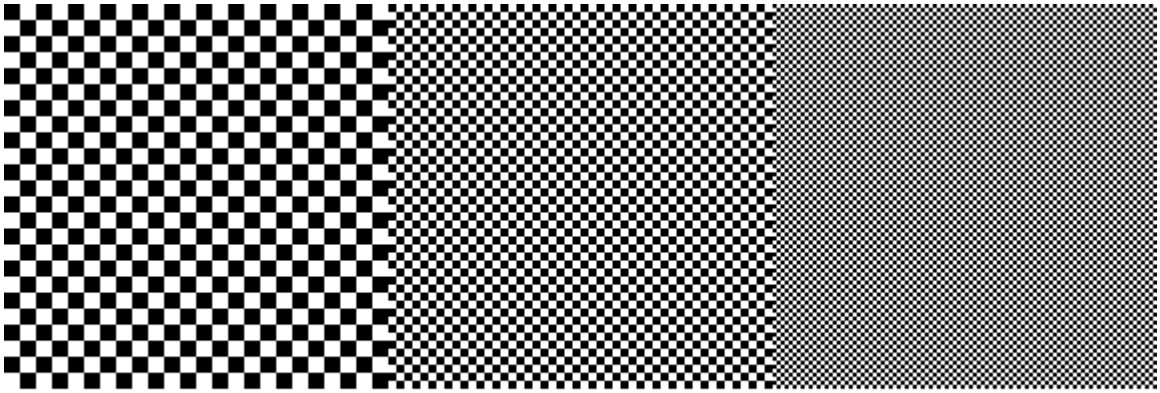
RESOLUTION:

Screen resolution, printer resolution and press resolution



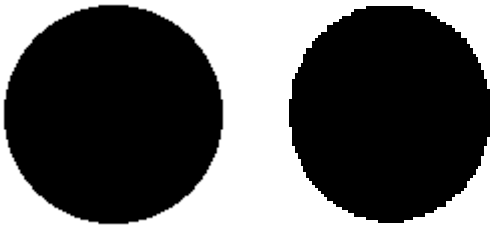
DEFINITIONS:
PPI: *Pixels per inch - The resolution (or detail) of an image in a scanning or graphics program. (Also the resolution of computer monitors: 72 ppi for Macintosh, 96 ppi for IBM compatibles.*

DPI: *Dots per inch - The resolution of an output device like a laser printer or imagesetter. A standard office laser printer is 300 dpi. A standard imagesetter is 2,540 dpi.*

LPI: *Lines per inch - The resolution (line screen) of a printing press, which determines how much detail the press (and the paper) can hold.*

The resolution of your graphics is extremely important. Just because a scan looks good on your screen or on a laser printer does not mean it will look good when it goes to film. Raster images (scans and images created in Photoshop, etc.) must be of sufficient resolution in order to print with good results. The minimum resolution required for raster art such as scans is TWICE the line screen of the press it's going to be printed on (in an emergency, most printers will accept 1 1/2 times). Most presses have a line screen of either 133 or 150 lines per inch (lpi), so most art is either 266 or 300 pixels per inch (ppi). If you don't know for sure what your printer's line screen is, just assume its 150 lpi, and make your scans 300 ppi.

Before you produce film, however, you MUST check on your printer's line screen. Photos at 150 line screen, when printed on a 133 line screen press, will likely end up muddy-looking.



Line art (a black and white image with no screens) should be scanned or created at a much higher resolution to avoid unsightly saw tooth edges (example on left). We recommend you scan or create line art at the highest possible resolution, up to 1,200 pixels per inch. If the image is large, that resolution may make a file too large to handle, and you may need to reduce its resolution to as low as 600 ppi, but no lower. This illustration demonstrates the dramatic difference a higher resolution can make in the quality of line art.

Beware of photo images on CD's!! Many offer you an RGB image that is small in size and low in resolution. You simply can't take a 1-inch wide photo that is 72 ppi and scale it to 8 1/2 x 11. What you will have is an 8 1/2 x 11 image with an effective resolution of 8ppi. It will look terrible. The illustrations below simulate the dramatic loss of quality when images are scaled up beyond a reasonable resolution:

Artwork that is created in a vector or Bezier curve-based program (like Adobe Illustrator, Corel Draw, or Aldus Freehand) CAN be scaled to whatever size you want, without losing image quality. This is because they create art that is not raster, but is rather based on vectors that can be moved, stretched and pulled into any size or shape, and will always keep a nice, smooth path. Bezier-based artwork requires a Postscript printer to print accurately, so it will appear jagged on most ink-jet printers. Don't be concerned. It will print correctly on a postscript laser printer or postscript imagesetter.

ADOBE ILLUSTRATOR NOTE: In Adobe Illustrator, version 7 and higher, you must select an output resolution for your artwork (1270 or 2540), or it may print hard angles rather than smooth curves on a high-resolution imagesetter. This can be set, before any objects are drawn, in the Edit>Document Setup dialog box. Or, you can select all objects and adjust the Output Resolution in the Attributes palette (Window>Show Attributes). If using the Attributes palette, remember to hit "enter" after changing your output value or the change won't take.

Adobe Illustrator
Output Resolution Settings

What your art looks like on the screen

How it will print with 300 dpi output resolution
(Examples magnified for illustration)

How it will print with 2540 dpi output resolution
(File>Document Setup or Window>Attrilbutes)