


GRAVOGRAPH  NEW HERMES

# ENGRAVER'S

---

## A C A D E M Y

### BITMAPS TO VECTOR LOGOS

A. First set up a new page in Corel Draw.

1. Left click on the file menu
2. Then left click on new

B. Importing Bitmaps

1. Understanding what a bitmap is

A bitmap is a picture composed of millions of small squares. Below is an example of a black and white bitmap.



Now zoom in on the top of it.



You see that the edges are very jagged and the letter looks like a staircase.

Now look at the same thing in Gray Scale.



Again, you see the staircase but with the lighter grays next to each one it appears smoother than the black and white image. This is called Anti-aliasing.

If you received this image from someone and wanted to print it very large, you would get a very undesirable end result.

The same image above was scanned in or created from scratch with a resolution of 300 dpi (Dots per Inch). That means for every inch of the original size there are 300 squares. The higher the DPI, the better the bitmap quality and printout.

2. Types of Bitmaps:

- |    |                       |                            |
|----|-----------------------|----------------------------|
| a. | 1 bit Black and White | 2 colors – Black and white |
| b. | 4 bit Color           | Any 16 colors              |
| c. | 8 bit Gray Scale      | 256 shades of gray         |
| d. | 8 bit Paletted        | Any 256 colors             |
| e. | 16 bit RGB            | Any 65536 colors           |
| f. | 24 bit RGB            | Millions of colors         |
| g. | 32 bit CMYK           | Billions of colors         |

As the number of colors goes up, so does the file size.

3. Common Bitmap File types

a. JPEG (.JPG)

Established by the JPEG (Joint Photographic Experts Group), this format is an international standard for compressed photographic images. It offers compression with minimal loss of image quality. Because of their essentially lossless compression (20 to 1) and small file size, JPEG images are widely used in Internet publishing.

b. BMP

The file extension for a Windows bitmap file. Although the .BMP file extension indicates the native bitmap format of Windows, it is also supported by many non-Windows and non-PC applications. A bitmap file stores virtually any type of bitmap data.

c. GIF (GRAPHICS INTERCHANGE FORMAT)

Graphics Interchange Format. Originally developed by CompuServe, .GIF is a graphic file format designed to use a minimum of disk space and be easily read and exchanged between systems. This format is commonly used to publish images of 256 colors or less to the Internet.

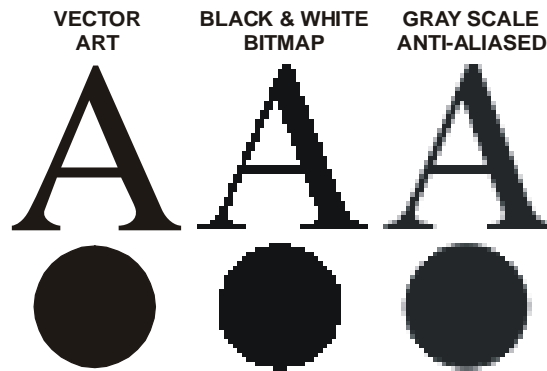
d. TIFF

Tagged Image File Format. A file format developed for page-layout applications that is supported by all image-editing applications. TIFF files can save RGB, CMYK, and Lab color mode information, but not duotones.

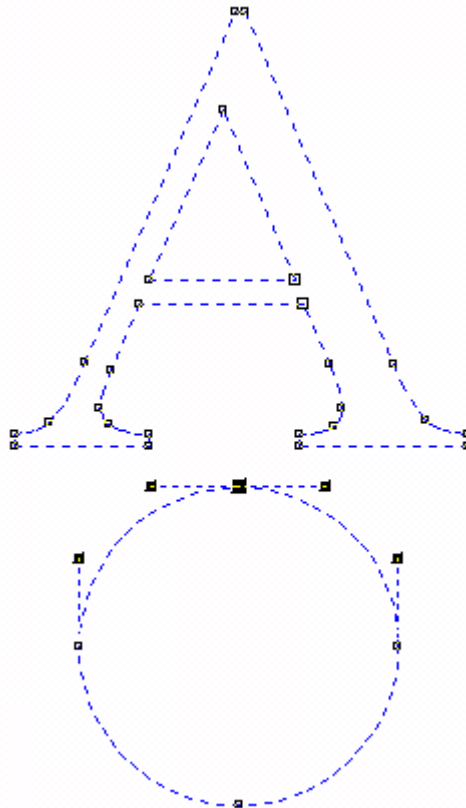
Above format descriptions (c) 1992 - 1999 Corel Corporation.

4. Understanding Vector graphics

- a. Vector graphics are made up of mathematical curves and straight lines. No matter how large or small the image gets, the quality and contrast are the same as in the example below.



- b. Vector graphics are composed of nodes (control points) along all the edges. See below:



5. Importing bitmap files

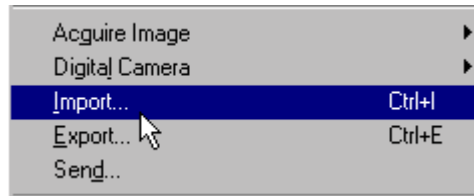
a. Left click on the Pick Tool



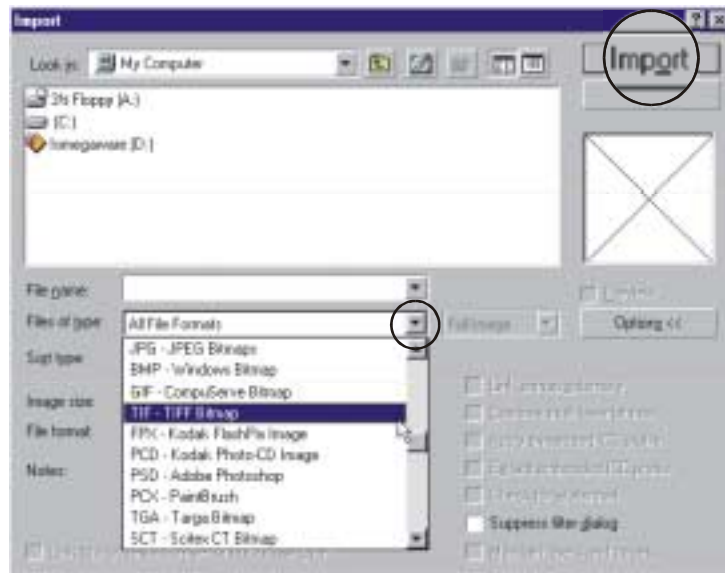
on the left tool bar

b. Left click on the file menu

c. Left click on Import



You will see the import dialog open up.



d. Left click the down arrow next to Files of Type

e. Left click on the up and down arrows to scroll to the file type you want to import.

f. Left click on the file type when found

g. Select the drive and directory where the file is

h. Left click on the file to import

i. Left click on Import

j. Move the Import mouse cursor



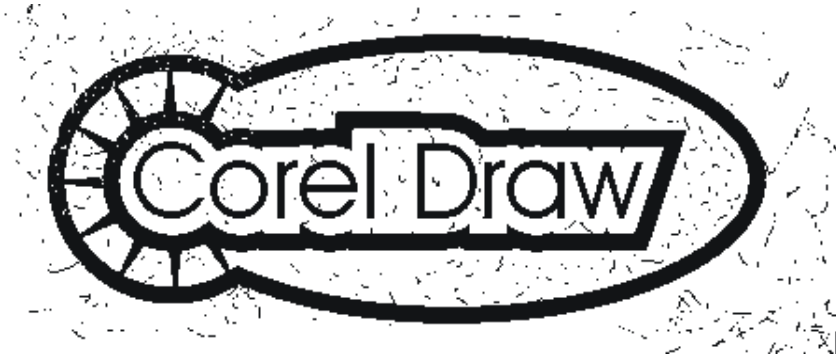
out to the

- k. Left click and hold
- l. Move the mouse cursor down and to the right, still holding the left mouse button
- m. When satisfied with the size, release the left mouse button.

C. Quick Bitmap Clean up with *Corel PhotoPaint*

1. Launching *PhotoPaint* from Draw

Some black and white bitmaps you scan or receive from others may be of poor quality or too low of a resolution like the Bitmap below.



- a. Import a black and white bitmap using the steps described in section B5
- b. Right click on the bitmap

You will see a menu pop up



- c. Left click on Edit Bitmap

This will launch Corel PhotoPaint. It may take a few seconds or more depending on your computer system.

2. Quick Clean up

- a. If the PhotoPaint window is not full size, left click on Maximize in the upper right corner of the window



- b. Left click on maximize window

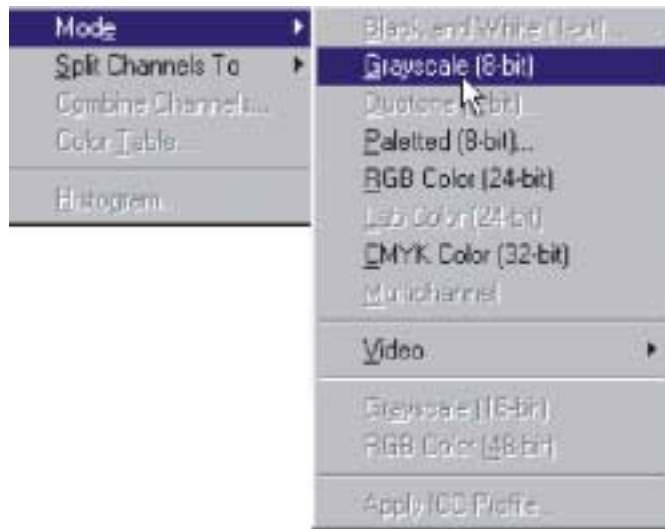


for the drawing

- c. Left click on the zoom level down arrow

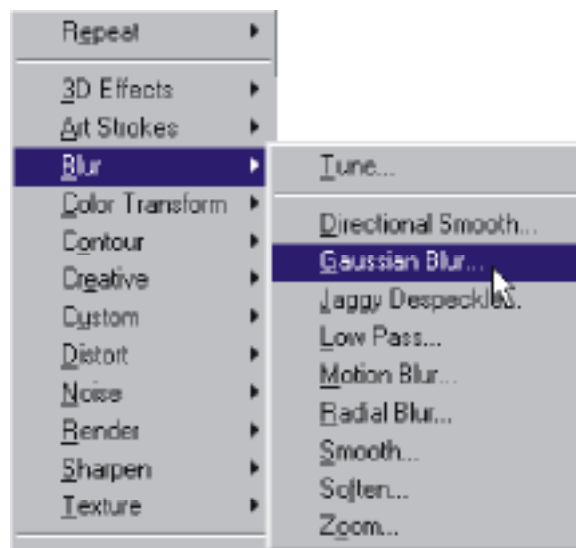


- d. Left click on 200%
- Now the bitmap is large enough to see the global changes take place
- e. Left click on the Image Menu then left click on mode to open the MODE submenu
- f. Left click on Grayscale (8-bit)

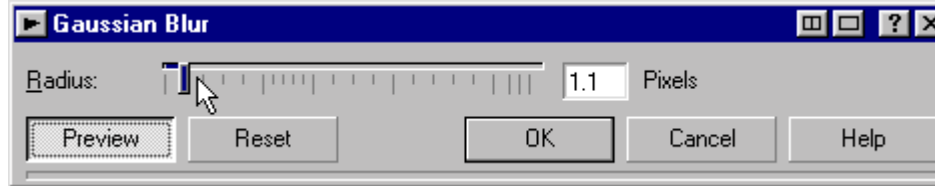


This converts our image to gray scale so we can apply a blur effect to it

- g. Left click on the Effects Menu then left click on the Blur submenu
- h. Left click on Gaussian Blur



The Gaussian Blur dialog window pops up as seen below



- i. Move the slider to adjust the blur

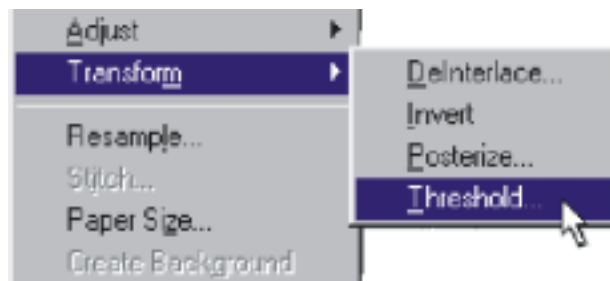
You should adjust the blur until most of all the parts you don't want are fuzzy but the graphics you want to keep are still legible. In this case, a 1.1 Blur radius was used.

The graphics have changed as below



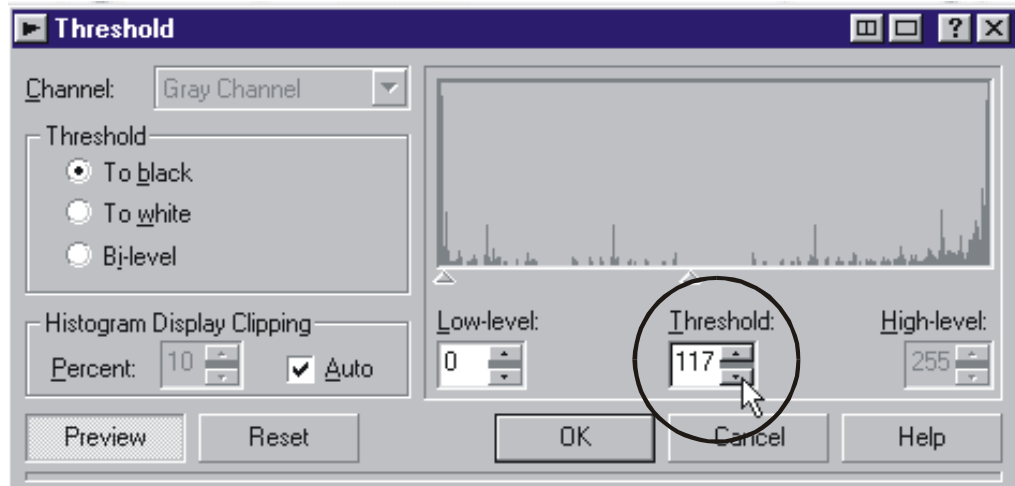
In this example the logo is still legible. All the undesirable graphics, however, are completely blurred.

- j. When satisfied with the results left click OK  
Now pull the section you want to keep
- k. Left click on the Image menu then left click on the Transform submenu



- l. Left click on Threshold

The Threshold dialog window pops up as below



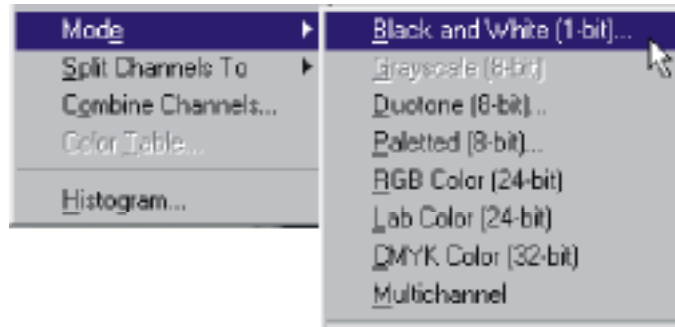
- m. Left click and hold on the blue title bar. Move the window up and out of the way of the graphics so you can see the changes taking place.
- n. Using the threshold arrows adjust the image until the portion of the graphics you want is in black. This example shows 117

The lower you set threshold, the less your bitmap will become black  
See example blow.

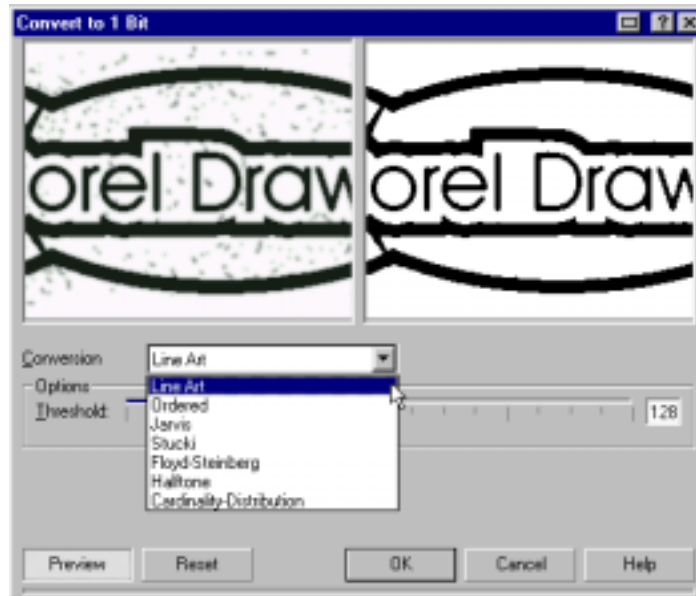


- o. When satisfied left click OK  
Now get rid of the gray areas

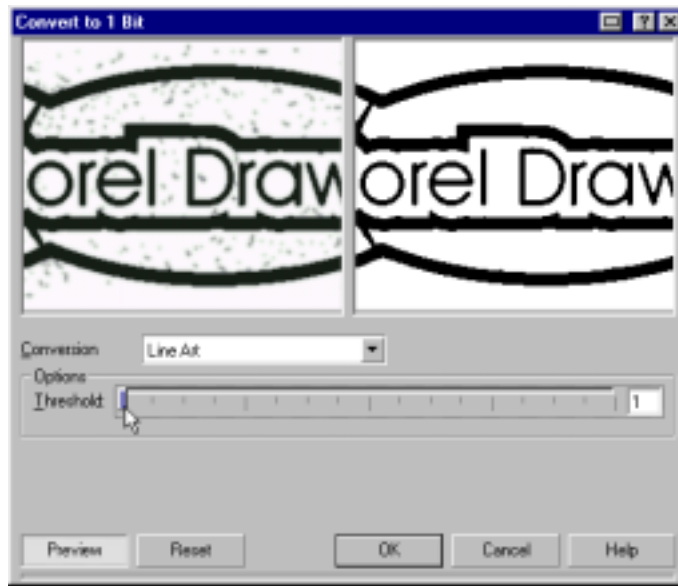
- p. Left click once again on the Image menu then left click on the Mode sub-menu



- q. Left click on Black and White (1-bit) to change the bitmap to black and white  
The Convert to 1 Bit dialog window will open



- r. Left click the down arrow next to conversion and then left click Line Art  
s. Now move the Threshold slider to the right until the number at the end reads as close to 1 as you can get.



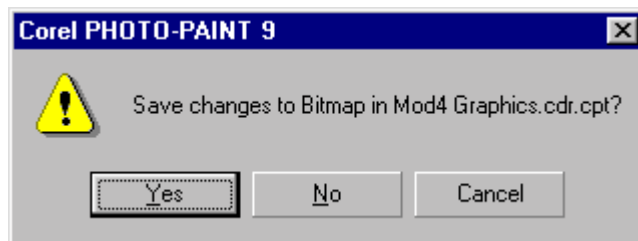
t. Left click OK

u. Left click on the close button  
uppermost right-hand corner  
PhotoPaint



in the  
of

A dialog pops up asking you if you want to save



v. Left click Yes

The bitmap is clean and ready for further work now

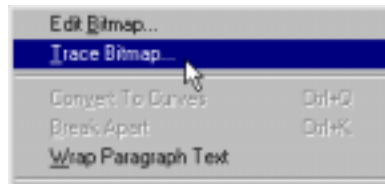


D. Using CorelTrace

In this step we are going to use CorelTrace to vectorize the bitmap we cleaned up above

1. Launching CorelTrace

- a. Right click on the bitmap you wish to trace.



- b. In the menu that pops up, Left click on Trace Bitmap

This will launch CorelTrace. It may take a few seconds or more depending on your computer system.

- c. Now move the Accuracy slider to 50 and Left click the Apply button



CorelTrace will attempt to vector trace the bitmap at 50% accuracy, smoothing jagged corners.

You can move the Accuracy slider and click Apply as many times as you want.

Note: Not every graphic is going to come out great. But it does a great job on high quality bitmaps.

- d. When satisfied with the Vectorized Trace, left click on the close button in the uppermost right-hand corner of the screen

50% Accuracy was used below



This one still needs could use some editing however now it is Vector Art.