



Scanner Basics for Macintosh

Course Description: This class provides an introduction to the software available for scanning both picture images and text. Participants will learn how to scan and edit using OmniPage Pro 2.1, Ofoto 2.0.2, and Adobe Photoshop 3.0.3.

Prerequisite: Working knowledge of the Macintosh operating system or completion of "Introduction to the Macintosh" course.




This document has been prepared for you by W&MF staff so that you can familiarize yourself with the basics of scanning text and graphics. This document is meant to serve as a future reference for you – covering from the very basic to the fairly detailed. Not all the information mentioned in this document will be covered in the *Scanner Basics for Macintosh* class.

What is a Scanner?

A scanner is a device that digitizes an image so that you can manipulate it on your computer. The scanner can be a useful tool, allowing you to copy images or text so that you can save them on your computer.

Getting Started

We will go over three applications today. In the campus microcomputer facilities that have scanner stations, all the applications are located in Macintosh HD , with a specific folder for each application. Before you start scanning, you will need to know the best application to use.

 <p>Ofoto for scanning pictures.</p>	 <p>OmniPage for scanning text.</p>	 <p>Adobe Photoshop for scanning and editing pictures.</p>
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An important term to understand is ‘resolution’:

- ✓ **Resolution:** Every image is comprised of a grid of tiny dots called “pixels” where the computer stores your smallest picture element. When you scan, edit, or cut your picture, you are changing the pixels. Resolution 72 dpi (dots-per-inch) means that there are 5,184 pixels in every square inch of the image (72 pixels per row x 72 pixels per column = 5,184). Generally, the more pixels per square inch, the sharper an image is and the smoother the blend between colors.
- ✓ **Bit Depth:** When scanning a picture, it is important to select a bit depth appropriate to the type of picture you are scanning. The higher the bit depth, the more colors will be available to handle the picture. If you scan a picture at 24-bits, there will be 16 million colors while an 8-bit image will consist of 256 colors. The bit depth of a picture will also affect the file size; the higher the bit depth, the larger the picture will be.

USING OFOTO



Ofoto 2.0.2 is an “expert operator” for desktop scanners. If you want to scan in a picture, perhaps a photograph, then Ofoto is a great application to use. You do not want to use Ofoto to scan plain text or do many changes like drawing or writing onto the scanned image.

Starting up Ofoto

To start Ofoto®2.0.2, open Ofoto *f* folder in Macintosh HD and double click on the icon:



How To Begin: Under the **Options** menu, select **Expert Controls**. You then will see the **Scan Controls** window and a scanning window on on left side of the screen with a tool bar.

How To Scan:

- 1.) Set the Calibration option to ‘**Apple Color Display**.’ To do this, click and hold on the pop-up menu that currently reads:

Apple Color Prtr

A list of options should appear. Select ‘**Apple Color Display**.’

- 2.) At the bottom of the window are two options: **Prescan** and **Autoscan**. If you are not sure what calibration to use, click on **Autoscan**. Ofoto will scan your photo in color with 135 dpi. Go to step 4.

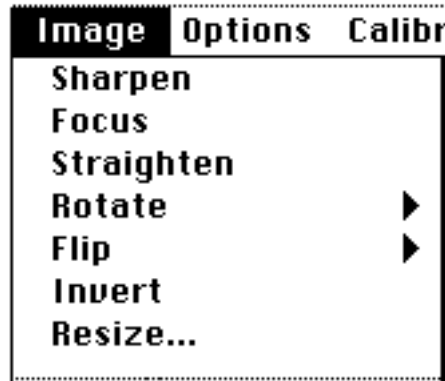


- 3.) To scan manually, that is, to change how the image will be scanned yourself, click on the **Manual** option if it’s not checked. Under **Scan Bits**, you can choose to scan in color, in grayscale or in other options. 24 : C will scan in color but if you want to scan grayscale only, select 8 : G. You can specify the quality of your scan image under **Scan dpi**. Remember, the higher the dots per inch, the better the image will look, but when you save the image, it will also take up more disk space. Adjust according to that trade-off. The last two boxes tell Ofoto how to save your image once it is scanned.

Note: if you are scanning a large image, then you should specify **Print dpi** as 72 or else you may not have room on your disk to save. You can *scan* at a higher resolution like 300 or 600 dpi and save **Print dpi** as 72. In this case, your image will look very nice and save space on your disk.

- 4.) Once you have specified all the options, click on **Prescan**. Your scanner will begin a quick scan (you can hear it humming and beeping a little!) When the scanner is done, you will see the your image appearing on the scanning window.

- 5.) Use the **marque** to select the portion of your image on the scanning window that you want to scan.
- 6.) Go to **Edit** menu and select **Crop**. This will save you time when you hit the **Scan** button again.
- 7.) You can perform other miscellaneous changes such as focus, brightness/contrast, resize, etc. under the **Image** menu.
- 8.) Save your document by going to the **Save** option under the **File** menu. You can choose the format. Refer back to know what type of format to save your image into.



The **Options** menu contains other scanning operations.

Automatic Operations:



If you click on the desired choice, Ofoto will automatically perform these functions. In this case, Ofoto will automatically change the highlighting and shadow of your image.



USING OMNIPAGE PRO

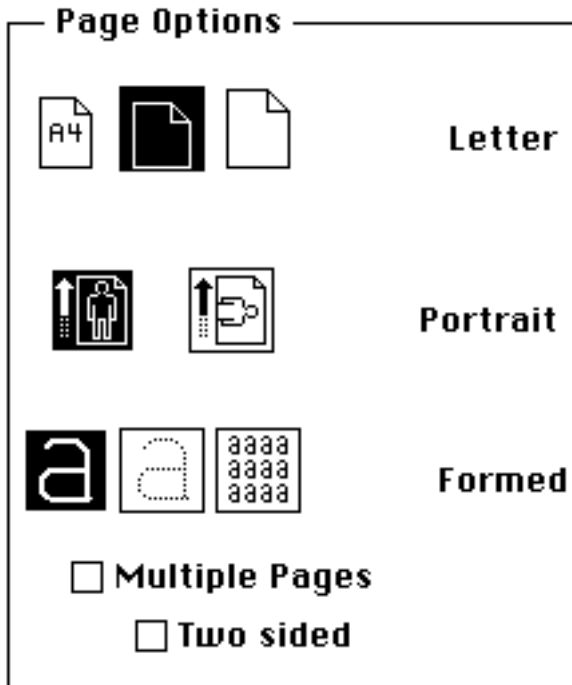


OmniPage Professional is an application that uses Optical Character Recognition (OCR) to scan in plain, written text and then save it as a text-format document on disk so that you can manipulate the document just as though you typed the text into the computer yourself. OmniPage is capable of recognizing alphanumerics in various layouts, including multiple columns and spreadsheets, OmniPage reads all non-stylized fonts in sizes ranging from 6 to 72 points.

To begin the process of scanning your text document, go to the **Process** menu and select **Scan**. The option **QuickScan** will show you a preview of what your document will look once it is scanned in. It is not very useful and we suggest you just use the **Scan** option when you start.



Upon selecting the **Scan** option, you will see a large dialog box asking you to set the page options. Most of these are default settings that you will not want to change. It is important for you to know what these options do in case you need specialized options. On the left hand side of the dialog box, it asks you to set the Page Options.

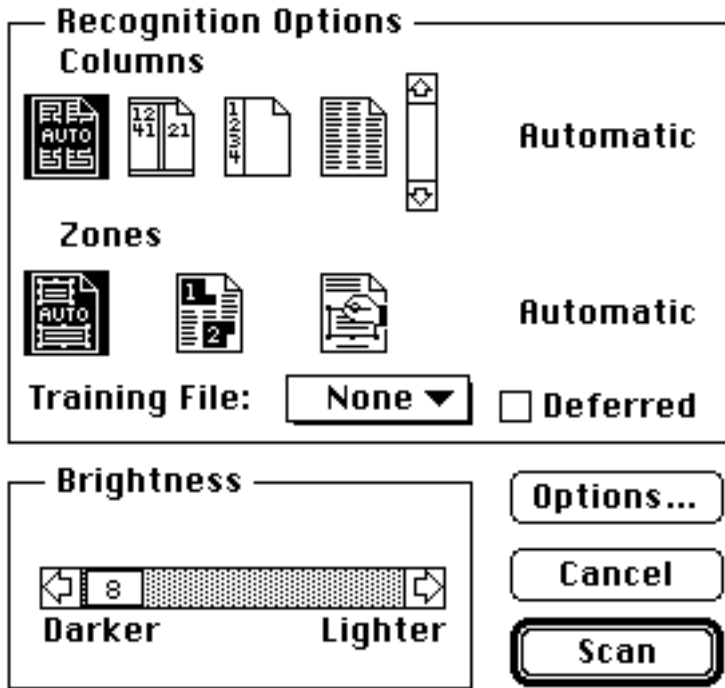


The first setting under **Page Options** asks you what type of paper you will be using. A4 is a European paper size based on the metric system. The second option is standard letter-sized paper. This is the default setting. The third option is legal sized paper (11" x 14").

The second setting is the orientation of the page you are scanning ... portrait or landscape.

The third setting is for the character type of your document. The first option is the default setting. It recognizes most text settings. The second option shows a dotted 'a'. This is for documents that were printed on a dot matrix printer. The third option recognizes fine print.

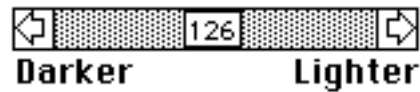
On the right hand side of the dialog box are the **Recognition Options**. These options include how many columns are on the page, how dark the image should be, and what parts of the document you want to scan.



You should leave Columns and Zones in Automatic mode so that OmniPage will calculate them automatically.

Make sure that **Training File** is set to None and **Deferred** is not checked. If you click on Deferred, OmniPage will not recognize the text but will save the file for later use.

The **Brightness Selector**
Usually you will want to drag the box over to the middle until the number displayed is within the range of 120-160:



When all of the settings are complete, simply click the scan button to begin the process:



After you have scanned your document, it is necessary to save it to a disk. You can do some preliminary editing such as spell check and margin fixes. When you go to save, it is important to set the format in which you want it saved.

“Caere Meta” is the default setting for OmniPage. You will not be able to open a Caere Meta document in any other application except OmniPage. The best settings are either Text or Microsoft Word 4.0.

Scanning Multiple Pages

Before you start scanning all your pages, you have to set the Save Options so that OmniPage will save all your pages into one document. Otherwise it would only remember the last page that you scanned.

- Under the **Defaults Menu**, click on **Save Options...**
- You will get a dialog box where you can enter in the name of the document.
- Check **Save Automatically** and then choose **One file**. OmniPage will save all the scanned pages into one document.



- Click on **Formats** and change the default from Caere Meta to Microsoft Word 4.0 or another word processing format with which you are familiar.


The **Defaults Menu** sets default options. For example: you can specify what language to use by selecting it under **Language...**; you can also tell OmniPage to ignore some particular character by going to **Preferences...** and selecting the “ignore character” option.

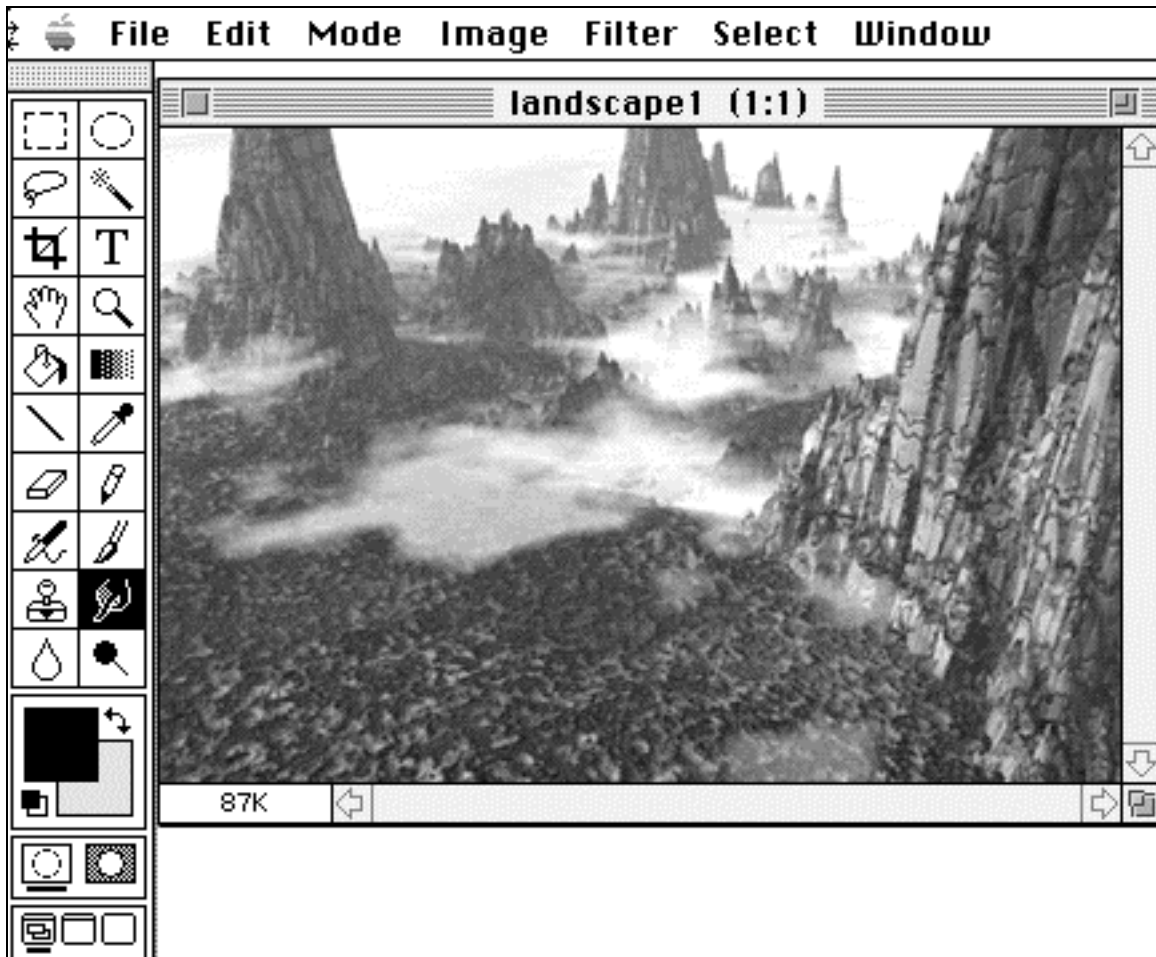
Once you finished scanning, you can go to Word 6.0 and open your document. Voilà!!! Your text file comes up as though you had typed everything in. You will need to change the text formats and margins. Other than that, everything would look normal.

USING ADOBE PHOTOSHOP



Adobe Photoshop is one of the best color image-editing programs around. It allows you to manipulate your graphic in many different ways to produce a professional graphic design look. This class will go briefly into some of the basic functions Photoshop offers. You can explore more of its features on your own.

Let's get started. The application can be found in the *Macintosh HD/Adobe Photoshop* folder. Click twice on Adobe Photoshop 3.0.3 to get into the application. Notice that no window appears. You can only tell if you are in Photoshop by the little  icon on right hand corner. If you already have a picture file on hand then you can **Open...** the file under **File Menu**, otherwise go to **File** and click on **New**.



Let's take a quick look at the screen.

The Drawing window:

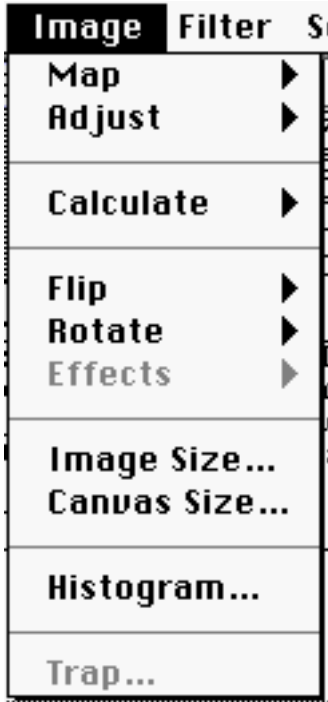
If you look at the top, you will see that next to the name of the graphic are some numbers in parenthesis. This tells you the zoom view status. If you zoom in, it will change to (2:1) This means that you are viewing the image at twice the size of the real image.

The Tool Bar:

On the left of your computer screen is the tool bar. It contains important tools for manipulating your image. You can find descriptions of each of the tools on the Tool bar supplement at the back of this document.

Let's take a look at different menus and what each of them offers:

II. Image Menu



The **Image** menu is primarily used to manipulate the shape of an image, and analyze and correct its color.

Brightness/Contrast:

-- This is the easiest step you can take to make your image clearer to look at. You can find this option under the Adjust submenu.

Rotating and Flipping:

-- You can flip your image upside down or left to right. You can also rotate it by 90°, 180°, 270° or any other angle.

Changing Image Size:

-- You can resize your image to smaller, larger or change the resolution of your image by clicking on **Image Size...** Once you change the height, the width of your image will proportionally change automatically.

Changing Canvas Size:

-- Sometimes you might want to increase the work area you have on the screen. You can do this by changing your Canvas Size.

III. Mode Menu



The **Mode** menu allows you to change color images to grayscale and to black and white. It also allows you to change from RGB Color (Red/Green/Blue), the standard computer color monitor display mode to a four color process CMYK (Cyan, Magenta, Yellow, and Black). This is helpful for the 4-color printing process.

Note: Once you change from color to grayscale, the color will be gone so you cannot change from grayscale back to the original colors on your image.

IV. Filter Menu

Filter	Select	Window
Despeckle		⌘F
Andromeda		▶
Blur		▶
Distort		▶
FotoMagic		▶
Gallery Effects Vol 1		▶
Gallery Effects: Classic Art 1		▶
Gallery Effects: Classic Art 2		▶
KPT		▶
Noise		▶
Sharpen		▶
Stylize		▶
Video		▶
Other		▶

The **Filter** menu creates effects similar to a photographer's filter that is placed in front of a lens to produce special effects. By applying a Photoshop filter in one of the Filter submenus, you can sharpen, blur, distort, stylize, and add lighting effects and noise to an image or part of a selected image.

Stylize and *Distort* are two submenus that contain many choices and special effects.

V. Select Menu

Select	Window
All	⌘A
None	⌘D
Inverse	
Float	⌘J
Grow	⌘G
Similar	
Border...	
Feather...	
Defringe...	
Hide Edges	⌘H
Load Selection	
Save Selection	

The **Select** menu allows you to modify a selection or select an entire image.

Grow: expands a selection

Inverse: reverses a selection so that everything that isn't selected will be selected instead.

Similar: will select all the areas with similar color with the the area selected that are not connected to the selected area. This would be helpful if you would like select one particular color on the whole picture and change it to some other color.

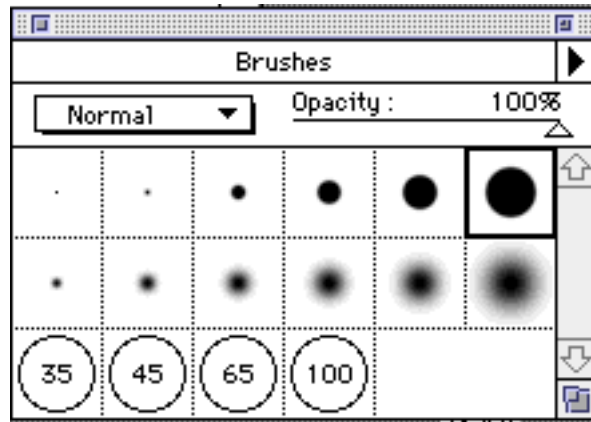
Border: replaces a selection with a border surrounding the original selection. You can specify the width of the border.

Feather: soften the edge of your image. You can use the Feather option to create a vignette.

VI. Window Menu

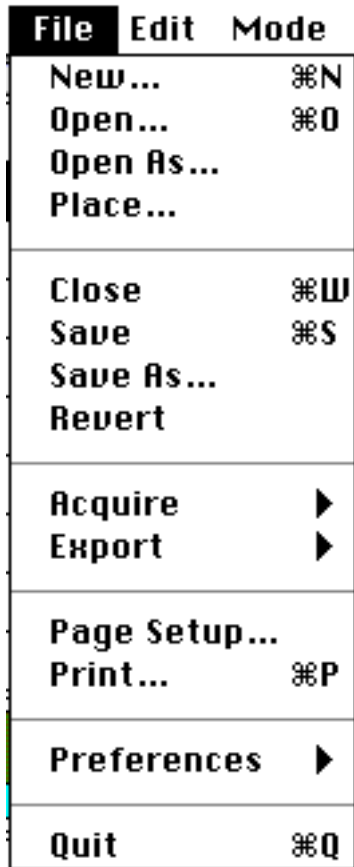


Under the **Window** menu, there are different subwindows that can be very handy while you use Photoshop. The most useful is the **Brushes window**.



You can use this window to change the size of your brush and the intensity of the color you about to use.

VII File Menu



Save: Don't forget to save your image with all the changes. If you click on the format menu, you can select the different formats to use. Go to the last page of this handout for some tips about which format to use.

Printing: If your image resolution is higher than 150dpi, Adobe Photoshop will give you a dialog box saying that your image is 2.5 times higher than the printer calibration. Just ignore the warning and press print. Don't worry about it!

VIII. How to Scan in Adobe Photoshop

Instead of scanning your picture from Ofoto and then opening it in Adobe Photoshop, you can scan your picture in directly.

Under the **File** menu, pull down **Acquire** and click on **ScanTastic™ps Apple**.



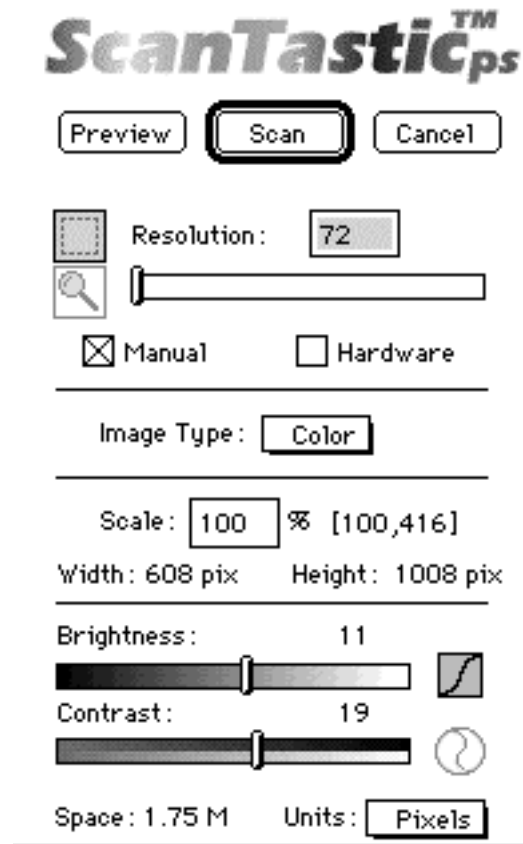
Specify Color or Grayscale under Image Type.

You can also change the resolution to anywhere from 72 to 300 dpi.

Click Preview.














☞ Using the marquee(the pointer), select the portion of image to be scan and click Scan.

♥ Photoshop will scan automatically and show the picture in your drawing window.



QUICK REFERENCE

Adobe Photoshop Tool Bar:

Tool	Description
	-- The Marquees. These tools allow you to select a portion of your image. You can change the shape of your Marquees by double clicking on one of the boxes.
	-- Lasso. This is like a freehand tool where you can select irregular shapes from your image.
	-- Magic Wand. The Magic Wand selects according to similar color. This is really helpful if you would like to select all areas with the same color that are not connected. To do this, click on the area and then go to Select menu and click on Similar.
	-- Cropping Tool. This tool is used to cut out a portion of an image and remove the rest. You can specify the exact dimension for cutting by clicking twice on the tool. There will be a menu where you can enter in the height and width.
	-- Text Tool. This is use for adding text to your image. If you would like your text looking crisp on the image then make sure anti-alias is deselected.
	-- Hand Tool. You can use this tool to scroll and view areas of the image that don't fit in the window.
	-- Zoom Tool. Lets you zoom in and out of your image. To zoom out, hold on the option key, and the plus sign will become minus.
	-- The Bucket. This tool lets you fill in the portion of image you selected with the foreground color. If you hold down the option key, the bucket will change and you can select a color from the image to fill in another area.
	-- The Fade Tool. This tool would color in your image fading from the Foreground color to Background color indicated. Click twice on the tool and you will get more options.
	-- The Line Tool. To make straight line, hold down the shift key. Otherwise, the line will be ragged.
	-- The Dropper. This tool selects the color on the image. All the painting tools will turn into a dropper if you hold down the option key.
	-- The eraser. This will erase your screen to the color on the background. If you hold down the shift key, the eraser will change shape and now it will revert back to the previously saved image.
	-- The pencil. See the Paint Brush description below.



-- The Airbrush. This tool acts like an airbrush in such a way that the slower you move away from the position, the darker it would paint.



-- The Brush. Go to Window and click on the Show Brushes. You will get a menu with different size of brushes. You can also change the color variation of your brush color by moving the little slider from lightest (0%) to the true color(100%).



-- The Stamp. This tool is for cloning part of the image from one place and copy it to another simultaneously. To select the place to start cloning with, hold down the option key and click once.



-- The blender. This tool lets you blend all the colors on your image together.



-- The waterdrop/ink pad. The waterdrop is used for blurring a part of an image. On the other hand, the ink pad would sharpen the portion.



-- The dodge/burn. This tool is used for darkening or lightening a specific part of your selected image.



-- This is the color display. The big black square indicates the foreground color. This color is the color that your brush, pencil or paint tools would show. The big white square on the back is the background color. You can change the color by clicking once in the square. You can also switch the background and foreground back and forth by the arrow on the corner. Clicking on the little squares will change your default foreground and background color back to black and white.

TIPS & COMMON PROBLEMS

Formats

- ✓ TIFF(tag image file format): the most versatile, reliable, and widely supported bit-mapped format. They can be of any size, resolution, or color depth. When given the opportunity, save images in TIFF as opposed to PICT. TIFF images have custom color mapping instead of the default colors.
- ✓ PICT (metafiles): standard format for graphics that are cut or copied to the Clipboard. This format is ideal for on-screen presentations. PICT images are low resolution when printed so beware!
- ✓ JPEG (Joint Photographic Experts Group) is a sophisticated technique for compressing full-color bit maps. A 24-bit image can be reduced to about 1/20th of its original size. This is good for saving space if you don't have enough space to save the image on your floppy disk.
- ✓ EPS (Encapsulated PostScript) files are the standard way of storing high-resolution PostScript illustrations. It contains 2 part (text and a pict preview). EPS generally can't be edited. Generally, you should not save your document as EPS unless you are very sure what you about to do. One of the common uses for EPS files are for graphically intense drawing programs.
- ✓ GIFs (ComputerServe) show color image in 256 colors which is the Index Color in the Mode Menu. Saving images in GIFs format will also save spaces.
- ✓ BMP: bit map files that can be read by the PC

Which Format should you choose for saving?

- For adding into Word, WordPerfect (Mac) document: save as Pict, Tiff
- For MSWord, WordPerfect (PC) : save as BMP
- For use in World Wide Web Homepages: save as Gifs or JPEGs
- For use in PageMaker 5.0(Mac or PC) : use Tiff (much better than Pict format even though Pict will also work with PageMaker.)

Compression

As you already know, an image will take a lot of memory and sometimes you do not have enough space on your disk to save the scanned image into. Here are some tips for eliminating this problem.

- Save As JPEG: in this way your image will be compressed down and once you open it again, the file will decompress automatically.
- Scan Grayscale if you will print: if you are only going to print out grayscale, scan in as grayscale. You can save for example from a 1.4MB to 257K image.
- Save color images as 256 colors rather than thousands by changing to Index color under the Mode menu in Adobe Photoshop.
- Reduce the resolution of your image or resize.

How To Upload into your Unix Account:

Use *Fetch* (Programs/Networking /Fetch 3.0.3/Fetch 3.0.3 §). Log into your account and then click on Put file. Make sure you specify **Raw Data** and not MacBin II.

For More Scanning Tips

General Scanning Tips:

<http://www.hsdesign.com/scanning/tipswelcome.html>

<http://www.scantips.com>

Photoshop Tips:

<http://www.adobe.com/studio/tipstechniques/photoshop.html>