

Capturing the Image: Digital Photography and Scanning

****Request Companion Article:**

The companion article includes research of the topic: links, resources, and details not covered during the hour presentation for further study.

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Request: "Digital Photography and Scanning-Boise"

Article Description: 50-plus pages with index, links

Course Description: Capturing a high quality image determines the correct preservation and highest quality for archival use.

Part 1: Digital Photography

Where to find Photo Studio In-A-Box from American Recorder Technologies:

<http://www.americanrecorder.com/>

Where to find camera mounted adapters for copying slides with a digital camera?

www.specialtyphotographic.com.

Define Digital Imaging

1. The Digital Advantage Versus Film Advantage.
2. Desired Features when Choosing a Digital Camera.
3. Defining Image File Formats.
4. Moving Photos from your Camera to your Computer.

Photographing as a Genealogist

1. Digital Photography is all about Lighting and Location.
2. Photographing Unbound Pages.
3. Photographing Bound Pages
Books can be a problem, because the pages seldom lay completely flat when the book is opened to a normal reading position.
 - a. Shoot book pages with the cover held up at about an 80-degree angle.
 - b. Rotate the book so that the spine is facing the back of the copy stand.
 - c. Open the book to the first page you want to shoot.
 - Make sure there are no shadows falling on the page.
 - Hold the front, or back cover and the pages preceding the one you are shooting.
 - d. Set the timer and press the shutter button halfway down and hold in position for a few seconds to give the camera time to adjust the automatic focus and exposure settings.
 - e. Check to make sure the focus is correct before pressing the button all the way down so the timer releases the shutter.
 - f. Before photographing the next page, place the opposite cover down on the table.

- g. Slide the book back into position so that it is under the camera, with the spine of the book toward the back of the stand. Note: if the page is upside down, that's ok. You can fix that during your editing.

4. Photographing Oversized Pages

- a. Set up your stand, and adjust your camera.
- b. Open the large book/page.
- c. Adjust the camera and take photos.
- d. If the page is too large for your camera (e.g., map, newspaper) consider taking multiple photos with can be "stitched" together in editing program.
- e. Rotate the book/paper as needed.

5. Photographing Photos

- a. Best shot with a mobile studio set-up (Better lighting with copy stand).
- b. Mount your camera on it's stand, in shooting position.
- c. Use a white sheet of paper/copy stand.
- d. Place your photo in position and anchor it with magnets.
- e. Select the camera's macro mode if necessary.
- f. Zoom in so your photo is properly framed.
- g. Check to make sure the focus is clear and sharp.
- h. Set the camera's self-timer, and press the shutter.
- i. View picture on the LCD, zoom in and check for the proper focus, and exposure.
- j. If the focus and/or exposure are incorrect, make the camera corrections, and re-shoot the document.

6. Photographing Microfilm

Note: These are the backlit or rear projection readers that shine a light through the film and use a series of mirrors and/or lenses to display an image of the film on a vertical or flat surface, the image displayed on either style can be easily photographed.

- a. Place your camera on a tripod located in front of the reader screen.
- b. Place a white paper on the read surface as the target area for shooting.
- c. Adjust the camera/tripod position so that the information you want to copy fills the LCD frame, not the viewfinder.
- d. Set the macro mode if necessary. This will depend on your camera model and how far away it is from the microfilm reader.
- e. Make sure the flash is turned off.
- f. Set the camera's self-timer.
- g. Gently press the shutter button halfway to lock the exposure and focus.
- h. Press the button completely down, move away from the camera and wait for the self-timer to trip the shutter.
- i. Take several shots. Consider using the "best shot selector" and/or auto bracketing your shots if your camera has these features or manual bracketing if it doesn't.

7. Photographing in the Libraries, Museums and Archives

- a. Know the library's policy about digital photography before you go.
- b. Do not use flash.
- c. Set up photo stand or tripod.
- d. May need to sign an intended uses statement.
- e. May need to have their staff handle rare objects.
- f. Only take photos of intended artifacts.
- g. No photos allowed of interior of buildings or people.
- h. Set up camera in corner away from others so as not to disturb.
- i. Set up near window to gain most from natural light.

8. Photographing at the Cemetery

9. Photographing Landscape and Buildings

Part 2: Scanning

Scanning Factors Affecting Image Quality

- Resolution/threshold—Increasing resolution enables the capture of finer detail.
- Bit Depth—Increasing the bit depth, or number of bits used to represent each pixel, enables the capture of more gray shades or color tones.
- Enhancement—Enhancement processes improve scanning quality but their use raises concerns about fidelity and authenticity.
- Color—Capturing and conveying color appearance is arguably the most difficult aspect of digital imaging.

System Performance

- The equipment used and its performance over time will affect image quality.
- Different systems with the same stated capabilities (e.g., dpi, bit depth, and dynamic range) may produce dramatically different results.

File Formats

- Bottom line - unless space on your computer's hard drive is at a real premium, stick with TIF when scanning and saving digital photos.

Computer Considerations Make the Difference

- Monitors
- Image quality—CRTs vs LCDs
- Computer considerations
- Printers

Choosing a Graphics Software Program

The key to good digital photos is selecting a good graphics software program. If you don't have photo editing software yet, there are a lot of good options available - ranging from free photo editors, to beginner photo editors, to advanced photo editing software. For photo restoration, a mid-range graphics software program offers the best balance of function and price.

Create a Rich Digital Master

Creating a rich digital master image file (sometimes referred to as an archival image) in which all significant information contained in the source document is represented.

- **Preservation**—Creating a rich digital master can contribute to preservation in at least three ways:
 - Protecting vulnerable originals.
 - Replacing originals.
 - Preserving digital files.
- **Access**—A digital master should be capable of supporting a range of users' needs through the creation of derivatives for printing, display, and image processing.
- **Cost**—Creating a high quality digital image may cost more initially, but will be less expensive than creating a lower quality image that fails to meet long-term requirements and results in the need to re-scan.

Scanner Types: Pros and Cons

- Flatbeds
- Sheetfeed Scanners
- Drum Scanners
- Microfilm Scanners
- Slide Scanners
- Digital Cameras

Key Points to Scanning Quality

- Check your photos for dirt, lint, or smudges.
- Check the scanner glass for lint, hair, fingerprints, or smudges.
- Specify the type of scan.
- Determine the best scan resolution to assure the quality and usefulness of your digital photos.
- Carefully position your photo on the scanner face down on the glass, just like on a photocopy machine.
- Crop the previewed image to include only the original photo.
- Avoid corrections while scanning.
- Check your file size so the resolution chosen isn't going to create a photo that is so large it's going to crash your computer.
- Scan the original image.

Detailed Examples of How to Scan Various Document Types

- Operator Judgment and Care—The skill and care of a scanning operator may affect image quality as much as the inherent capabilities of the system.
- Printed Text/Simple Line Art—distinct edge-based representation, with no tonal variation, such as a book containing text and simple line graphics.
- Manuscripts—soft, edge-based representations that are produced by hand or machine, but do not exhibit the distinct edges typical of machine processes, such as a letter or line drawing.
- Halftones—reproduction of graphic or photographic materials represented by a grid of variably sized, regularly spaced pattern of dots or lines, often placed at an angle. Includes some graphic art as well, e.g., engravings.
- Continuous Tone—items such as photographs, watercolors, and some finely inscribed line art that exhibit smoothly or subtly varying tones.
- Mixed—documents containing two or more of the categories listed above, such as illustrated books.

File/Image Processing

- Editing, touch-up, enhancement—this includes steps such as descreening, despeckling, deskewing, sharpening, use of custom filters, and bit-depth adjustment. In some cases, the scanning software performs these steps. In others, separate image-editing tools (e.g., Adobe Photoshop, Corel Photo-Paint, ImageMagick) are utilized.
- Compression—sometimes carried out by dedicated scanner firmware or dedicated hardware in the computer. Compression can also be a software-only operation though dedicated hardware is faster and should be considered when creating very large files or very large numbers of files.
- File format conversion—the original scan may not be in a format suitable for all intended uses, thus requiring conversion.
- Metadata creation—addition of text that helps describe, track, organize, or maintain an image.

File Management

- Keeping track (basic file system considerations). Another aspect of keeping track is covered in Metadata.
- Image databases and other image management solutions (special software for organizing image files).
- Storage (devices and media).
- Maintenance (backup, migration, preservation, and security).