

Preserving Family Heirlooms:

A step-by-step approach to saving your family's treasures



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Definitions



- Embellishments: Decorative enhancements such as ribbon, buttons and decorative metal objects.
- Emulsion layer: Photosensitive coating on photographic film, paper or glass.
- Foxing: Fungus on paper reacts over time with iron salts in paper. When this happens reddish brown spots begin to appear.
- Humidity: Refers to the relative amount of moisture that is in the air based on the room temperature and the amount of water the air can hold at that temperature (a percentage scale).
- Red Rot: A term used to describe the chemical breakdown of leather, most common in vegetable-tanned leather.

Documents

- “Rag Paper” or linen paper, is paper that is mostly comprised of organic materials like linen or cotton. This type of paper lasts a tremendously long time with very little deterioration of yellowing. The Declaration of Independence and the Constitution were reprinted for the masses on this type of paper.
- “Pulp Paper” is paper that is made up mostly of wood pulp. Popular beginning around 1860 this paper is the most common form of paper used today. Phonebooks, newspapers, and notebook paper are just some of the places you find pulp paper. This type of paper is highly acidic and deteriorates over time. The paper begins to yellow and becomes brittle, ink begins to fade or bleed onto other pages.



Problems:

- With standard conditions (70 degrees and 50% humidity) paper will become brittle within a generation (15-20 years).
- Pulp paper, as stated earlier, is inherently acidic. It turns yellow as it begins to deteriorate. There are deacidification sprays to purchase that neutralize the acid in paper. This will halt the deterioration, but not repair the damage.
- Foxing: Fungus on paper will react over time with the iron salts in paper. The process is hastened if stored in warm, humid, spaces. The process can be reversed, but it is cost prohibitive.
- Red Rot: When leather begins to deteriorate from extreme conditions like excessive heat and humidity, it begins to flake and leaves a red dusty residue on nearby books and objects. The dust permanently stains clothing and hands so be very careful.

Problems Continued

- Books made of vellum (lamb skin) are extremely susceptible to heat and humidity. It causes the bindings to expand to twice their normal size and pushes other books off the shelf. Once this happens there is no repair. You would need to rebind the book.
- Acidation happens when paper is not properly rinsed causing the chemicals to stay in the paper. This leads to brittle paper that breaks at its stress points. This acid can transfer to other objects that come into contact. The process is called acid migration.
- High heat causes paper to dry out and become brittle
- Lack of moisture and low temperature causes pages to shrink and pull away from the binding.
- High Humidity can cause mold growth and water damage.

Solutions

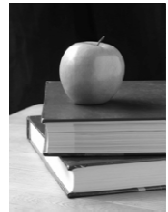


- Use 60 watts or less incandescent bulbs (fluorescent bulbs are much safer).
- Store rare and fragile books in a consistent environment. Extreme heat or cold can damage books and documents.
- Optimal conditions for documents and books is 65-68 degrees and 45-50% relative humidity.
- Protect books from direct sunlight by using drapes or shades.
- Non-water based cleaners and document cleaning pads can be used to remove surface dirt from documents. Test a small inconspicuous section of the paper to make sure the ink will not run, or the chemicals will not fade and-or damage the paper.

Solutions Continued



- Do not eat or drink when handling old books and wash your hands after eating. Grease and oils from food can leave stains and hasten the deterioration of the paper.
- Inspect for insects once a year. Hot and humid conditions breed mold and mildew which attracts insects. Insects are drawn to the glues in the spines of old books.



- Small portable fans are a great way to circulate air in a room. Air circulation helps to dramatically decrease the likelihood of mold and mildew common in stagnant environments.
- Portable battery-operated humidity detectors are a great way to visually see the fluctuations in your house. These are available at most hardware stores.

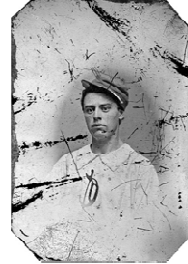
Solutions Continued

- Encapsulate (NOT LAMINATE!) documents once they have been cleaned and place them in Mylar or other polyester sheets that do not contain PVC or PVA.
- Acid free file folders can be used to store loose documents and pamphlets. Label folders, and other enclosures to minimize handling.
- Place folders in boxes tight enough to that the folders will not shift or slide within the container causing further damage.
- Do not store paper documents in cardboard boxes or plastic containers. Unless you are sure that you are using archival quality acid and lignin free boxes or plastic containers containing no PVC or PVA.
- Make 2 photocopies of every document; one for on-site storage and One for off-site storage in case of an emergency.

Photographs

*Glass Plate and Tin Types
Black and White Photographs
Color Photographs*

Tin Type



Daguerreotype



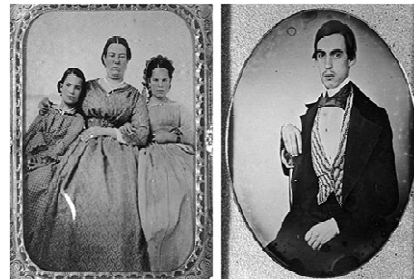
Cabinet Card

Glass Plates/ Daguerreotypes

Daguerreotypes: These increasingly rare early American photographs are comprised of metal and glass. The image copied directly to a thin layer of pure silver on a copper substrate.

A mat was placed around the silver to keep the glass from coming in direct contact with the image, then the glass was added. The edges were then sealed with wax or animal fat and wrapped in paper or fabric then enclosed in a decorative case.

These images were very expensive. Sitting times were also long, which is why you see few children or smiling faces; they were too hard to control.
<http://daguerre.org/dagfaq.php>



Problems

- Daguerreotypes are at the mercy of the elements. If their seals are broken, or if the glass cracks they can suffer from a host of problems.
 - If a seal becomes broken they begin to allow in condensation, which can cloud the image.
 - If exposed to high heat and humidity, it can also cause mold.
 - Exposure to direct sunlight can also cause the image to fade and heat can dry out the chemicals forming the image and cause cracks and fissures.
- Once the seal is broken on a Daguerreotype, there is no way for you to reverse the damage. Seek out a qualified photo conservationist.
- Daguerreotypes should not be repaired at home. These items are increasingly rare and require professional care. See the list of companies at the end of the hand-out for more information.

Tin Types

Tin Types: Tin Types were patented in 1856. These types of photographs were inexpensive and made by the million. There are no negatives for tin types. Small ½ x 1 inch images were called 'gems' and affixed to cardboard or worn in jewelry.

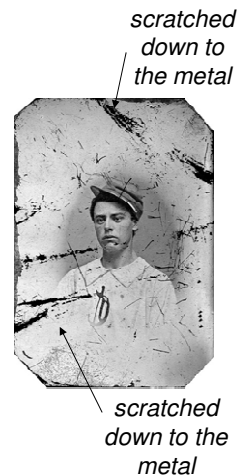
Early images were enclosed in fancy cases, but most of what you would find today are caseless varnished images.

Many were hastily produced and lack definition. Many of the images are reversed because of the printing process (meaning if a photo was taken in front of a storefront, the words on the window would read backwards).



Problems

- Tin Types suffer from exposure to the elements. These images were often carried by soldiers during the Civil War and sent home to loved ones. They were passed down from generation to generation and handled often. Because of the perceived indestructibility of the images, they can be in poor condition.
- Tin types are particularly susceptible to rust especially if the varnished layer of the tin type became damaged and air and moisture reached the exposed metal backing.
- These photographs bent very easily which caused the varnish to crack.
- Many tin types that were not coated in varnish were easily scratched causing image loss.

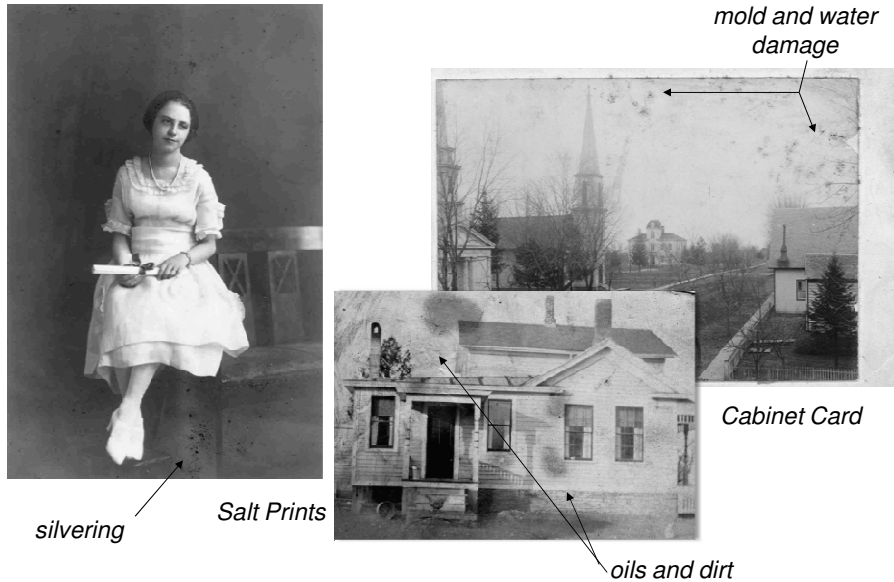


Black and White Photographs



- Black and White photography has been in existence since 1839. There are many varieties of printing processes associated with this type of material and just as many styles of photographs.
- Carte de Visite & Cabinet Cards: are a very common form of photograph. They are black and white photographs attached to heavy cardboard paper and many were used as calling cards or business cards in the late nineteenth and early twentieth centuries.
- Salt Prints: are what most people think of when picturing black and white photographs. They are images produced from a negative onto various sizes of coated paper. These same processes are still used today for black and white photography.

Black and White Photographs



Problems

- Carte de Visite/Cabinet Cards have different problems from salt prints. Over time exposure to light causes these images to fade much faster than modern black and white images. These particular prints yellow with age until the images almost disappear completely.
- Light Exposure is truly destructive to these types of prints. Not only do they yellow, but blacks begin to take on a metallic sheen leaving an unsightly glare when looking at these photos.
- Another problem associated with these types of photographs are the inherent instability of the cardboard backing. Most of these prints were attached to heavy cardstock which is pulp paper. As we saw previously, pulp paper is highly acidic and deteriorates quickly. This high level of acidity not only weakens the cardboard backing causing it to become brittle, but it eats away at the emulsions of the photograph causing loss of image and staining.

Problems Cont.

- Salt Prints, like any other prints, have their weaknesses. As with any type of chemical process, failure to properly rinse the photos leaves a chemical residue, damaging the image and causes fading, staining and transfer.
- Exposure to heat and humidity causes these types of photos to stick together and feel sticky to the touch. This can irreparably damage the emulsion layer of the photo causing loss of image.
- High humidity can also spur mold growth and invite insect damage.
- Too low of humidity can cause the photo emulsion layer to shrink causing the photo to curl and pull away from the paper backing.
- Exposure to light does not cause as much damage to these prints as to the others mentioned, but they will fade with time.

Color Photographs

Color photographs have been in use since the late 1930's. Each photograph has a separate layer of Yellow, Cyan and Magenta.

If these photos were not properly rinsed after development, or stored under improper conditions, one or all of the colors may fade at different intervals leaving some photos predominately red, blue or yellow.



Problems

- Color photographs are the least stable of all types of photographs
- They are extremely vulnerable to heat and humidity
- Color photos exposed to direct sunlight or lamplight fade much faster than black and white photographs
- These types of photos are much more likely to experience mold and mildew issues



This image suffers from poor rinsing



This photo was taken in 1990, but was kept in a magnetic album

Photographic Storage



- Always store black and white photos separate from color photos.
- Store negatives in a separate location from prints.
- Use containers that are buffered and are acid & lignin free.
- Store photos upright not flat.
- Do not use rubber bands or paper clips on any type of photos.
- Do not use tape or glue of any kind on photos--always use photo corners or sleeves.
- Do not keep photos in the cardboard or paper envelopes they came in or any type of unidentified plastic containers.

Solutions

- Once photos begin to deteriorate, there is little that can be done at home.
- Handle with care. Oils from your fingers leave residues on photographs. Try to wear white cotton archival gloves when handling old photographs.
- Simple cleaning of photos can be done to remove surface dirt. NEVER use water! You must use special cleaners.
- DO NOT store photographs in the basement or attic.
- If photos do become water damaged: Place in an air-conditioned room below 65 degrees. Carefully separate items and place them on a flat surface between layers of fabric.
- DO NOT USE PAPER TOWELS! Place a heavy object on top of fabric to avoid curling.



Solutions

- Keep images in temperature and humidity controlled environments. You can not reverse the damage that has already been done, but you can halt or slow down continued deterioration.
- Limit light exposure. Do not expose these images to direct sunlight or lamplight for extended periods of time.
- Use copies of photographs (if possible) instead of originals.
- If a negative still exists it can be copied any place film is developed.
- Scan photographs on the highest possible resolution and save them to a computer or disc as a TIF or RAW file, not as JPG. JPG files will fail over time and are not archival quality.

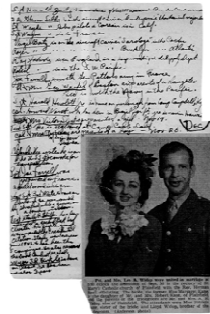


Scrapbooking Dos and Don'ts



- Scrapbooking is not a recent phenomenon, it has been around for centuries. Modern scrapbooking varies from previous incarnations in the fact that we are much more concerned with quality of products and preservation for future generations.
- Do read the labels! Not all products are alike.
- Do order products from reputable vendors. Just because a product claims “archival quality” or “photo-safe” does not mean it is. Many products may be safe now, but not in the future.
- Do be aware that embellishments like buttons, stickers tags and ribbons may react with paper and photos over time, causing the materials to degrade and become discolored or brittle.

Scrapbooking Dos and Don'ts



- DO NOT use magnetic albums, even those that claim to be archival quality or acid free! The paper yellows quickly and the chemicals in the glue eat away at any photographs or documents placed on the page. Many items also adhere permanently to the pages over time, causing serious damage when removed.
- Do use archival quality page protectors to keep pages from rubbing together especially if you are using raised embellishments.
- Do use copies of documents and photos and not originals, especially if you are going to crop or change the item in any way.

Historic Scrapbooks

- Do store small to medium sized albums upright.
- Larger scrapbooks or books that are bulging/have loose items can be stored flat. Non-bulging albums can be stacked on top of each other, no more than 2 high. The weight can cause damage to bindings and photographs.
- If pages are brittle or breaking, tie pages closed with linen or white cotton fabric tape. Just be sure that the tape is not rubbing against the pages causing further damage.
- Do not repair historic scrapbooks with tape or adhesives. Use photo corners to put photos & papers back into place.
- Do not disassemble a scrapbook unless you are sure it isn't too fragile to take apart. If too fragile, place acid-free paper or polyester page protectors between the pages instead. This adds bulk, but keeps acid migration to a minimum.



Historic Scrapbooks continued

- Do store albums that are severely deteriorated or damaged in acid-free storage boxes.
- Do photocopy newspaper clippings or other yellowing and brittle papers onto acid-free paper and replace in the album (Do not remove the clippings if they are too brittle and may break if you remove them).
- Do make 2 photocopies of papers, documents and clippings. One for the scrapbook and one for your files. Be sure to store the original in an acid-free folder or envelope to protect it from further damage.
- Do try to remove as many paperclips, rubber bands and staples that you can without damaging the pages and replace them with photo corners or brass paperclips.
- Do scan or take pictures of historic albums before you disassemble them, to preserve its historical significance.



Further Reading:

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- ❖ Eastman Kodak Co. *Conservation of Photographs*. Eastman Kodak Co. Rochester, N.Y. 1985.
- ❖ Frisch-Ripley, Karen. *Unlocking the Secrets in Old Photographs*. Ancestry. Salt Lake City, UT. 2001.
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- ❖ Tuttle, Craig A. *An Ounce of Preservation*. Rainbow Books. Highland City, FL. 1995.



Websites:

- ❖ Scrapbook Preservation Society:
www.scrapbookpreservationsociety.com
 - ❖ Getty Institute: www.getty.edu/conservation/about
 - ❖ Image Permanence Institute: www.imagepermanenceinstitute.org
 - ❖ Library of Congress: www.loc.gov/preservation
 - ❖ Library of Congress: www.digitalpreservation.gov
 - ❖ American national Standards Institute: www.ansi.org
 - ❖ Northeast Document Conservation Center: www.nedcc.org
 - ❖ Archival Company: www.universityproducts.com
 - ❖ Light Impressions Archival Supplies: www.lightimpressionsdirect.com
-
- ❖ Dead Fred: www.deadfred.com
 - ❖ Ford & Nagle: www.fordnagle.com
 - ❖ Adopt-a-Photo: www.adoptaphoto.com