

Preserving Family Memories



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Welcome

BIO

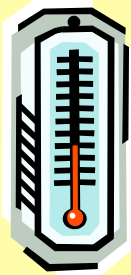

Basic Preservation Steps

- Good environment
- Non-damaging storage materials
- Careful handling
- Limited display
- Use your nose...it will tell you if something is happening!

Environment

Critical Factors

- Temperature
- Relative Humidity



- Light Source and Levels
- Pollutants

- Preservation requires proper storage and safe handling practices.
- Your family papers will last longer if they are stored in a stable environment with temperatures around 60-70 degrees F;
- a relative humidity around 35 - 40%
- with clean air and good circulation.
- ASHRAE standards call for 4 air exchanges per hour in an occupied space, NARA calls for 6 air exchanges.
- Large fluctuations in relative humidity and temperatures are the most detrimental environmental properties present in any environment
- Fluctuations cause expansion and contraction which in turn can lead to distortion and weakening of paper fibers, photographic emulsions, plastics, and other materials.
- Damp environments may also result in mold growth and/or be attractive to pests that might use the documents for food or nesting material.
- HEPA filtration is recommended to remove dust and particulates from the atmosphere.
- Light, especially ultra violet light from sunlight or **fluorescent** light, causes many problems in paper. You have all see newspapers yellow when left on a front porch.
- The effects of light exposure are cumulative and irreversible; they promote chemical degradation in the paper as well as changes in the paper's color and fading of inks.
- It is not recommended to permanently display valuable documents or photographs for this reason. Make good quality reprints for display purposes.

Avoid Storing Papers and Photographs...

- Near sources of heat or moisture
- In attics, basements, garages
- Moderate conditions that are comfortable for people are suitable for storing most papers, books, and photographs

Preservation Problems Affecting Paper

- Some papers are of inherent poor quality, such as newsprint
- Poor quality papers...and those exposed to poor environmental conditions...can become weak, brittle, yellowed

Mold and Insects



- Moisture intrusion causing mold growth
- Pests using the paper for food or nesting material

- Remember to keep your records away from overhead and adjacent pipes. Mold will need to be remediated by a professional conservator.
- Monitor your storage area for pest intrusions, both rodents and insects.

Storing Loose Papers or Documents



- Acid-free folders
- Acid-free document boxes



•Family papers should be stored in appropriate sized enclosures, such as a folders, boxes, portfolios, etc., that will provide physical protection as well as protection from light and dust.

- The enclosure itself should be made of stable permanent quality materials that will not contribute to the document's deterioration.
- Place all loose documents in acidfree folders and in acidfree boxes
- Letter and legal size
- Other sizes are available for odd size documents

Preservation Problems Affecting Photographs

- Poor original processing can result in yellowing and staining
- Metallic sheen known as “silvering” on black and white photos
- Color photographs are often unstable; dyes will shift and fade
- Poor quality paper supports and mounts can be weak and crack

- Most likely, fading and staining of black & white photos that is due to poor original processing.
- But it could also be due to some rubber cement on the verso.
- Even if photo corners are visible, adhesive may have been used as a "belt and suspenders" approach for mounting photographs, therefore staining from the adhesive on the back of the photo may still be a possibility.
- In either case, once the silver has oxidized, there's not much to be done.
- Stained and faded photos are good candidates for copying and digital restoration.
- The same goes for yellowing or fading of the originals. Not much can be done, except to make a copy now before more of the image is lost.

Preservation Tools

- Cool storage for color photographs
- Copying or scanning to protect originals



Image Permanence Institute

Visit the IPI site for information on storing
photographs and the stability of digital prints.

<http://www.imagepermanenceinstitute.org/>

Storing Photographs

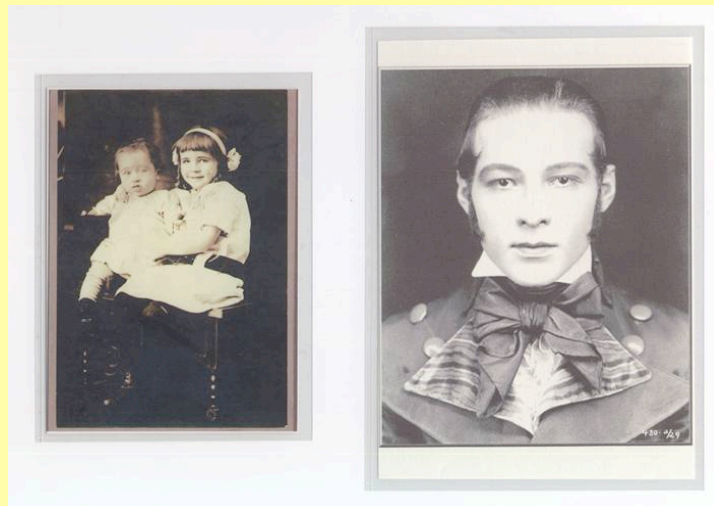
- Paper enclosures: non-acidic envelopes, sleeves, folders
- Plastic enclosures: meet preservation requirements
- Safe plastics: polyester, polyethylene, polypropylene
- Avoid polyvinylchloride (PVC) [new car smell!]
- Photographic Activity Test
- Purchase from suppliers of preservation materials

Acid-free Envelopes



Acidfree envelopes provide the prefect way to store photographic negatives.

Polyester L-Sleeves



- Polyester l-sleeves are available for storage of photos when mixed with paper documents or for fragile paper records.
- Any extremely fragile paper would benefit by being placed on top of an acidfree sheet of paper before sliding it into the polyester L-sleeve

Photo Albums

- Historic albums, often with black paper
- Potential problems with adhesive staining and weak paper that is broken at edges
- Respect and preserve historical structures

- These early scrapbook style photo albums with black construction paper-like leaves were popular through the 1950s into the 1960s.
- The paper was made from wood pulp which contains lignin which is an acid that is inherent in wood pulp papers.
- It is the lignin that makes papers made after the 1860's degrade (or weaken) so quickly. It is also what makes your newspapers turn yellow if left on your door step too long.
- In this type of album you will find many adhesive problems and you can find many problems with the photos themselves.

Problems with Some Modern Photo Albums

- “Magnetic” albums
- Poor quality papers
- Adhesives cause staining and can lose adhesive properties
- Unknown plastics can be unstable, cause yellowing, and adhere to photos

- Not only does the glue used in the magnetic album pages stain, it fails to hold.
- At times you can find photos falling out of these albums.
- The plastic used in the album can be another problem. Generally the plastic is not readily identifiable.

Preservation Quality Albums

- Polyester or polyethylene plastic sleeves available in different sizes
- No adhesives needed



- Polyethylene/polypropylene sleeves are available to house photographic collections.
- They come in a variety of sizes.
- Light Impressions, Inc., University Products, Hollinger Corp.

Displaying your Family Treasures

- **LIMIT light exposure**
 - No sunlight
 - No fluorescent
 - Limited incandescent lighting
- **Signs of Damage**
 - Documents that are weak, brittle, or yellow to dark brown in color
 - Faded ink
 - Photos with a metallic sheen, that are darkened, cracked, or that have undergone changes in color

- Much of the damage seen comes from light exposure
- Ideally you will want to display only copies of the original, to preserve the life of your original, because it is difficult to limit light exposure.
- If you must display the original, limit the amount of time you place it on display. I recommend 3 months.
- Ideally no sunlight should ever hit the original (or even a copy), so choose a wall that never sees any sunlight.
- If there is no way to avoid sunlight in the room where you want to display the piece, put UV filters on the windows. If there is fluorescent lighting, place UV filtering on those light bulbs.
- Incandescent lighting, which emits the least amount of UV light should be limited to a 60 watt bulb or lower and originals should be placed at least 4 feet away from the light source.
- There are many signs of damage that you can be on the lookout for including cracking of the paper substrate, and fading or changes in color of the media.

Display Copies Instead of Originals

- Color photocopy
- Scan and print
- Retain originals safely in dark storage

When Matting and Framing Original Documents

- Use window mat to keep document from direct contact with glass
- Use acid-free rag board mats and backing boards
- Avoid adhesives by using photo corners

- Mats provide a spacer between the glass & the artifact.
- This space protects the artifact from ferrotyping, which is a phenomena whereby moisture enters the frame which can adversely affect materials next to the glass, causing them to stick to the glass. Once the media is stuck to the glass it is nearly impossible to separate the two items without damaging the media or the paper substrate.
- Choose acidfree mat board.
- Items displayed in acidic mats will darkened border near the mat edges in as little as 10 years.

Plastic or Paper Corners

- Use polyester or acid free paper
- Adhesives do not contact document



- Light Impression Clear hold – polyester corners
- University Products – polypropylene corners
- Gaylord - polypropylene corners

Avoid...

- Pressure-sensitive tapes
 - “Scotch” brand tapes
 - Masking tape
- White glues, such as Elmer’s
- Rubber cement
- Adhesives used with hot glue guns

- Pressure sensitive tapes present a variety of problems
- As you have probably already observed pressure sensitive tapes discolor and stain.
- It takes solvents to remove the tape and reduce the stain, and you must experiment with known solvents to determine which one will remove any particular tape
- Whichever solvent will remove the tape, may not reduce the staining, so you must experiment with other solvents to determine which solvent will reduce the stain.
- Nearly impossible to remove all staining.
- Must be done professionally – need fume hood, chemical licenses, and definitely need experience, knowledge and skill
- When tapes loosen the adhesive may still be viable, which can allow that now loose photo to shift and perhaps stick to another photo.
- Mixing newspaper articles in with photographs in the album can be another problem, remember lignin is in that newspaper, which is an acid that can transfer and damage adjacent photos.

Preserving Books

- Keep in original format
- Box for protection



- Books retain their value if they are intact or retain as much of their original cover and paper wrapper as possible.
- One exception may be a book that has a high quality design binding.
- The best way to preserve even an intact book is to box it.
- A simple box can be constructed using lightweight cardboard.
- You can not always tell whether or not a book is a rare book or not. One Kurt Vonnegut paperback book with a misprinted cover is extremely rare

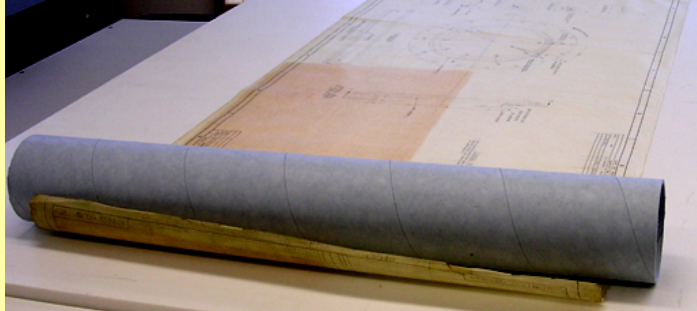
Shelving Books

- Shelf books according to size so they can support one another
- Do not intersperse tall and short books
- Store large volumes flat
- Avoid unsealed wooden shelves
- Protect books from light to keep spines and covers from fading

- Shelve you books according to size
- A tall book next to a short book will be effected by temperature and Relative humidity fluctuations
- Shelves should not be wooden, if you have wooden shelves, line them with polyester film – Mylar or Melinex
- Protect books from Ultra Violet light

Oversized Items (Maps and Posters)

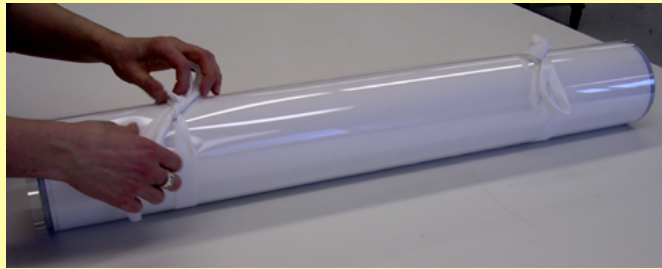
- Oversized records can be rolled onto acid-free tubes



- These tubes can also have a buffer added to the tube which can act as an alkaline reserve. This alkaline reserve can counteract acid migration from the rolled record.
- Cut the tube at least 1 inch larger than the record to allow for some drift when rolling the record.

Protect Rolled Items

- Protect rolled items from light exposure by using an outer wrap of acid-free paper
- Provide even greater protection with a final wrap of plastic (polyester or polyethylene) around the entire package. Tie the roll with cotton twill tape



Magnetic Media Storage





- Audio Tapes, Video Tapes
- Polypropylene storage containers
- Machine Obsolescence

We're finding that magnetic tapes are quickly becoming obsolete. To add to the problem the machinery is also becoming obsolete. Make digital copies and store those digital copies on servers or hard drives. Routinely check to ensure integrity of the information and migrate to updated software. At times all it takes is 3 generations of software to get to a point where the older files cannot be opened.

Environment 65 degrees F 35% RH.

Dust, grime and environmental pollution are often the greatest threat to your audio/video collections. Protect your videos and audio cassettes by storing them in these long lasting polypropylene cases. Polypropylene is an inert, non-reactive plastic suitable for long term, dust-free storage of media of all types.



Electronic Media

- Ideally files are saved to a server or hard drive and backed up on CD or DVD.
- Archival Gold CD-R and DVD-R
- Must be periodically copied

Digital copies of files should be saved on servers or hard drives. Routinely check to ensure integrity of the information and migrate to updated software. At times all it takes is 3 generations of software to get to a point where the older files cannot be opened.

Archival Gold CD-R's and DVD-R's are designed to resist the effects of light, heat and humidity. These disks are coated with 24 K gold which resists the oxidation problems that commonly cause information drop out associated with silver CD-R's and DVD-R's.

Most common causes of degradation are Ozone, UV Light, Mold & Mildew, and Electrostatic Discharge. Atmospheric corrosion of metal layer on CD's and DVD's is caused by Hydrogen sulfide (H₂S), Carbonyl sulfide (COS), Sulfur Dioxide (SO₂), Hydrogen chloride (HCl), and Ozone (O₃.) Although they thrive best in warm, humid environments, fungi can exist under cold or dry conditions. While it is most likely that fungal growth will occur on the non-metallic material, fungi can exist on the metallic surface, creating an undesirable film deposit.

Labeling CD's and DVD's

- Not Recommended
- But, if you must!...use a solvent-free marker on the upper side (the one not being read)

Use a solvent-free marker is 100% guaranteed safe for writing on recordable CDs and DVDs. It is non-toxic, alcohol-free, permanent and quick-drying. Perfect for use with our new Archival Gold CD-Rs

CD/DVD Storage

- Polypropylene Cases



Polypropylene - inert, non-reactive plastic suitable for long-term dust-free storage of media of all types

Research performed at Bell Labs has determined four causes of CD/DVD degradation: Ozone, UV Light, Mold & Mildew, and Electrostatic Discharge.

Cases with corrosion intercept were designed by Bell Labs

American Institute for Conservation

- Referral service for conservators in your geographic area
- All specializations (paper, books, photos, objects, paintings, textiles, etc.)
- 1156 15th Street NW, Suite 320
Washington, DC 20005-1714
- 202-452-9545
info@aic-faic.org

- You can contact the AIC for a conservator
- All specialties
- Look on-line to find a conservator or call the office
- You can also check on-line for other information

National Archives and Records Administration

- For more information about the National Archives and Records Administration look on-line at: <http://www.archives.gov/>
- For more information about preservation practices at NARA look on-line at: <http://www.archives.gov/preservation/index.html>

Thank You!

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