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Focus On Photo Care and Preservation

They're fun, they're interesting and they celebrate events in your life. They provide a visual record of your family history and a sense of continuity and place within a family unit. You no doubt enjoy viewing them and displaying them in your home. Will future generations also have this enjoyment? That's up to you and the care you give these important treasures... your family photographs.

One family member often becomes the family historian and enjoys having a camera ready for informal, candid snapshots of family members, day-to-day activities, such as birthday parties, a child's first day at school, and vacations. Formal or posed photos taken at photography studios, at schools and churches, and as a part of life events such as weddings and family reunions, add to this visual collection of memories that provide an ongoing family record. These photos serve as a connection between past and present and instill a sense of home and place. Photos provide enjoyment for all family members and serve as triggers for reminiscing, a particularly important part of the life review process for the elderly. They also provide a bridge between family generations, important for both children and adults.

Fading Memories

Don't let these visual memories fade away! Oil portraits of famous people and places from the past have lasted for centuries, but many photos from just a few decades ago are damaged as a result of time, improper handling, and methods of storage.

Today's visual family history will not last for generations without proper care. Those in the film industry learned this through experience and the loss of early film and television video and are now taking great care to protect their film heritage. There are recommended practices to help keep old family photos in good condition. Plan now to preserve your family history and memories of people and events by giving family photos the best care possible. You'll be doing historians a favor since "ordinary" photographs can be important in ways that people often don't recognize. Historians and museums have used photographs extensively to understand a culture or way of life during a certain period of time by studying such things as clothing styles and the interiors and exteriors of buildings.

A Lost Generation?

We've been living in the most photographically documented era in history. However, the visual heritage of a generation is in danger of being lost for those whose childhood pictures were taken in color during the 1950s and 1960s.

It's estimated that more than 90 percent of the 14 billion snapshots taken every year in the United States are now in color. However, it's rare to find color prints from the 1950s and 1960s that are not noticeably changed. Photos from an earlier era actually provide a much more durable record since these pictures were taken entirely in black and white, which has much greater stability.

Care of Your Photo Collection

Take a look at your collection of photos. Most of us have black and white family photos taken before the 1950s. These may be stored

in a shoe box or photo album, some identified and some not. Now compare these with color photos, color slides, and videotape images of family members and events. These photo images are wonderful, but they have limitations. As you look at color snapshots and color slides taken in the 1950s and 1960s, do you notice any fading of color? Some of this is a result of the emulsions and photography processes used. Careless handling and storage of these photo images can also cause irreversible damage.

Many things that we innocently do everyday cause permanent damage to family treasures. For example, everyday paper clips, rubber bands, adhesives, and even fingerprints can damage photos. Storage and display methods such as plastic bags, cardboard boxes, and some of the popular photo albums also cause irreversible damage to photographic images. It pays to become knowledgeable about safe storage methods and techniques for organizing and handling your collection. You're preserving memories and family history.

Storage Methods for Photos

People have different ways of storing photos "until they get around to doing something with them." This length of time often extends from months into years as photos and negatives are stored in plastic bags and cardboard boxes waiting to be organized. And all too often someone will discover a forgotten old shoebox of photos in an attic or basement storage area. This is not good!

Plastic bags and non-acid-free boxes release harmful vapors that cause permanent damage to photos. In addition, a typical attic or basement storage area has wide shifts in temperature and humidity. Bugs are also a problem. Some of the worst damage, however, is caused by careless handling by humans and the ordinary but popular photo album with magnetic plastic sheets that can be purchased at your local discount store. Such an album serves as a photo storehouse for many of our country's 64 million families, and people assume that their family treasures are being preserved to be passed down to future generations. However, research has shown that this type of photo or memory album often damages photos much more quickly than the ordinary shoebox storage system. The situation has become even more serious because less expensive materials are being used in many photo albums to keep prices low. Many of these plastics are unstable and give off harmful gases and chemicals that damage photos over a period of time. Recent research has shown that damage from poor quality materials is much more extensive than was originally thought.

Look for archival products for the best preservation of photos. Archival products are safe and do not give off harmful gases or chemicals. When looking for these products,

What To Save

This is highly subjective and usually determined only by the importance an object has for the collector. However, some of the questions an archivist might ask are: Is it identifiable? Is it rare? Does it typify an era or a process? Does it reflect a change or evolution within lifestyles? Is it associated with a famous person or a major figure in your life? Is it related to an event that will be of interest to others years from now? Does it evoke strong emotions or sentiments? Is it part of a series?

Someone may be inclined to toss one issue of a periodical, a commemorative coin or other item that is part of a series. Or perhaps something within a specific time during one's life may tie together events that come before and after. If in doubt, save and discuss it with another knowledgeable person.

shop at a reliable business, ask questions and look for certain words. For instance, paper and board products should say "acid-free" and "lignin-free." "Buffered" materials contain chemicals such as calcium carbonate that raise the pH level to 8.0 - 8.5 and neutralize harmful chemicals. They are recommended for storage and display of black and white photos. However, these buffering agents may harm some materials by causing color shifts or changes. Therefore, "non-buffered" paper and board with a pH level between 7.0 and 7.5 is recommended for use with color prints. Most "pH neutral" papers and boards tend not to discolor because the acid/alkaline balance is within an acceptable range. There are pH testing products available to determine pH factors, and special sprays can be used to deacidify paper and board products containing acids. These sprays can also be used on newspaper clippings, letters and cards that are often among the many additional materials displayed in family albums.

Archival plastics include specific products such as Mylar D® (polyester), polypropylene, and polyethylene. Do not use products containing PVCs (polyvinyl chloride). These products are unstable and release harmful fumes that damage paper, prints, and film. PVCs are most common in vinyl.

Keep archival recommendations in mind when considering methods for mounting photos. To be considered archival, a treatment must be reversible. An archival quality adhesive is removable and causes no permanent damage or change. Many linen tapes and special mounting seals meet these standards. Some adhesives are acid-free or are constructed with acid-free materials. For instance, a "glue stick" containing white paste similar to wheat paste is a fairly neutral adhesive that can be used for snapshots or items of limited value. Clear glues are too acidic and corrosive for use with photographs. Pressure-sensitive corners for mounting photos are recommended by many conservationists to keep them out of direct contact with adhesives. Photos are easy to remove and replace. Mounting corners come in black, white, clear, and decorative designs.

Do not use cellophane or masking tapes for mounting display items. The adhesive used with these products is too corrosive, is not reversible, and will leave a residue on the surface. In addition, cellophane tape turns yellow in a short time. Instead, use a high-quality, acid-free paper tape or other tape that is labeled for archival use. Be careful not to place any tape over the front edges or corners of the object to be mounted.

Other items to avoid in storage and display include white glues, rubber cement, paper clips, staples, rubber bands, plastic bags, common cardboard boxes, water soluble inks and ballpoint pens.

Store Them Safely

After you've organized your photos in archival albums, pages, and storage systems, you'll need to decide where to keep them. Photographic material is organic and is affected by temperature, humidity and light.

Prevent moisture, dust, and other atmospheric substances from harming photos by putting them in photo albums with acid-free paper and storing the albums in boxes. Do not store the boxes in damp basements or near heaters. Do not stack photos together in a shoebox.

They'll do best in the same humidity and temperature levels that you enjoy, not stored in the basement or attic. Extreme temperatures affect both the photographic paper and emulsions. Harsh light with ultraviolet radiation causes fading, and swings in humidity cause substantial damage. A room

temperature between 60 to 70 degrees Fahrenheit is acceptable with a relative humidity between 30 and 50 percent. Cooler temperatures are good for color slides but must not be accompanied by higher humidity, such as in a basement. Be particularly careful about "cycling" or wide fluctuations in temperature and humidity, as this can cause chemical changes and encourage fungi growth. In general, the cooler and drier the better, and keep it consistent.

It's never too late to begin preserving your collection so it can be enjoyed by generations to come. Your main goals must be to provide an environmentally safe storage area and to make your photographic materials easily retrievable for viewing or use. With proper care and storage, deterioration is minimized and your photos are organized and accessible.

As you're thinking of storage systems, keep in mind some basic facts regarding interaction of photographic materials with their environment. For instance, remember that...

- Polyvinyl chloride (PVC) pages break down to form hydrochloric acid and emit harmful fumes. These pages will have a strong "plastic" odor. The vinyl pages leave a destructive oily residue and also wrinkle, shrink, and stick to film emulsions, causing splotchy patches.
- Sleeves for holding photos and slides should be made of archival quality acid-neutral paper, polyester, polypropylene or polyethylene. (Remember that slides are the originals and there are no negatives of these images. Don't leave them out where they can be exposed to moisture and dust.)
- Avoid plastic storage containers that may contain polyvinyl chloride (PVC). Acid neutral boxes and photo albums and acid free envelopes are available.
- Wood storage cabinets and shelving give off vapors that are harmful to photos over a period of time. (Metal provides a safer environment than wood for long-term storage.)
- High heat, humidity, light, and dust can have an adverse effect on color images.
- Humidity may cause the emulsion of one print to stick to another print. If that happens, and you pull them apart, it will damage the photos.
- Some people choose to copy old photos and store the negatives in a dark place with no wide cycles of temperature or humidity. With good care, these black and white negatives will last indefinitely.

Proper Storage for Negatives and Photos		
Recommended	**Avoid**	**Other**
■ Acid-free papers (buffered and non-buffered) ■ Polyester (e.g., Mylar®) ■ Triacetate ■ Polypropylene ■ Polyethylene ■ Tyvek®	■ Glassine envelopes ■ Vinyl or other plasticized sheets with PVCs ■ Non-acid-free papers ■ Kraft paper envelopes ■ Rubber bands ■ Paper clips ■ Pressure-sensitive tapes	■ Maintain steady environment with humidity and temperature ■ Appropriate relative humidity with a combination of materials would be 30%. Contact a photo shop or professional photographer for more detailed information

Restoring Old Photos

Conservators who specialize in photographs are fairly recent. A conservator works with preservation, display, and storage, with many also offering expertise on safely cleaning and restoring damaged photographs and other memorabilia. All conservators may not be experts in the same things, but most will refer people to other specialists in the field. If you live near a museum with a large collection of photographs, begin your search there. A professional group, AIC, also provides a referral service. Their address and Web site is as follows:

- The American Institute for Conservation of Historic and Artistic Works (AIC) and FAIC Conservation Services Referral System, 1717 K Street N.W. Suite 301, Washington, D.C. 20006; Telephone: (202) 452-9545; Fax: (202) 452-9328

- The AIC is accessible through the COOL (Conservation OnLine) Web site along with an extensive collection of other information on conserving photos, media, and books, among other topics: http://palimpsest.stanford.edu/ .

Storage Methods for Slides

Use care in storing color slides that have been taken over the years. Although black and white negatives are fairly stable if well cared for, color slides will lose quality over time. Color slides may last 10 to 50 years, depending on the type of care given to them.

Light and dust are two major enemies of color slides. Use dark storage areas since color dyes in slides will fade if exposed to light for long periods of time. When projecting slides for viewing, set the timing for them to change at least every 15 seconds to protect them from prolonged exposure to light.

Dust is made up of chemical pollutants, dirt (an abrasive), and fungi. Use good housekeeping in your slide storage area and wear lightweight, lintless cotton gloves when handling slides. Handle slides by their edges or mounting since fingerprints on the image can produce stains from acidic oils.

Organize slides by storing in carousel-type trays, slide pages, box storage, or cabinets. Here are some points to consider when selecting a storage system.

Storage Method	Advantages	Disadvantages or Cautions
Carousel Trays	Allows air space between slides	Takes up more space. More difficult to locate and remove one at a time
Slide Pages	Easy to use Easy to expand collection. Stores in binders or filing drawers	Avoid polyvinyl plastics Use polyester, polypropylene, polyethylene or triacetate pages *Note:* Costs vary. Polyester (Mylar®) is most expensive. Polypropylene pages have greater clarity than polyethylene
Polypropylene or Metal Boxes	Safe and stable storage Keeps in smaller categories or units	Avoid wood or cardboard boxes that are not acid-free
Cabinets	Keeps large numbers of slides in stable environment Use sturdy steel cabinets with baked enamel finish Features vary (removable drawers, index dividers, stackable units)	Avoid wood cabinets (glues and varnish can give off harmful fumes)

Storage Alternatives

Some people prefer to transfer slide or photo images to videotape or DVD (digital video disc) for frequent viewing and enjoyment. Original slides and photos can then be stored away in a stable, safe environment for long-term life. Videotapes and DVDs should be stored on end (not flat) and in a stable environment without wide cycles in temperature and humidity. Commercial costs for this process vary. Check with local sources for costs in your area.

Consider purchasing and using a quality digital camera for clear, sharp photo images that can be transferred to a computer, or take your roll of film into a photo-developing service that gives you the option of having them put online or on photo CD. This service is quick (often within one hour of film processing) and you will be able to download them to your computer. You can then share with friends, e-mail them to distant relatives, order gifts displaying these photo images (mugs, computer mouse pads, t-shirts, etc.), use them as screensavers, and order reprints or enlargements without negatives. You can also easily organize your photos into online albums for quick reference. Some families are organizing special Web sites for access to family history and photos. A special password allows privacy for these records. These photos are of very good quality and color, depending upon your computer capabilities.

Another option is to transfer photos to CDs (compact disks). This service is also offered at many commercial photo labs and studios. Be aware, however, that even CDs are not guaranteed fail-safe. They can occasionally

fail and are also vulnerable to environmental decay. There are now, however, CDs of archival quality in which the reflective layer is made from 24K gold instead of silver. This is said to stop degradation from oxidation (CD rot). It's recommended for long-term storage of digital files, including photos, music, and other data. It has been tested for aging and is said to be able to safely store information for more than 300 years. You might want consider storing precious family photos and family history on these newer CDs. Many professional photographers recommend archiving to external two-band drives – one at the computer and one stored off-site.

Handle CDs by the edges only and store them vertically away from light sources in jewel cases that will protect them from scratches. As with photos, it's always best to make a duplicate copy of significant photos and information to store in another place (bank box, a trusted friend or relative's home, or other location) where it would be safe from a possible fire, flood or other disaster.

CDs provide a means of printing clear photos at home using a good quality color printer and special photo paper. These photographic images can also be used as a screensaver; or you can create a calendar with 12 different family photos to give out at family reunions, a Web page for family photos and history that can be entered only with a special password, or a heritage album.

There are many advances in computer and photographic image technology. The world of computers has expanded in this area at a tremendous rate. Be alert for new developments and changes that are opening up for consumers with online capability!

Summary

Use practical knowledge and common sense in preserving your photos. The best and easiest way to preserve these treasures is to store them properly.

- Keep them in air-conditioned and heated spaces: No attics, basements, garages, or storage sheds where extremes in temperature and humidity promote mold, mildew, and insects.
- Since most materials are damaged by light, limit their exposure to bright light and sunlight.
- Keep your photos and mementos clean. Don't let dust, grime, oils, or stains build into a hard-to-remove coating.
- Be sure the work area is clean and free of food or beverage residues.
- When sorting and handling your keepsakes, always have clean dry hands. Clean cotton gloves are added protection.
- Don't smoke around areas where you are working or where the items are stored.
- Since wood can give off chemicals that could harm these delicate keepsakes, avoid placing photos and other keepsakes on bare wooden shelves and drawers.
- Identify and document your collection to answer the questions of who, what, when, where, and why. You are the best, perhaps only, source of much information. No one else may know. Create a list of items in your collection and add information that is not obvious from the objects themselves.
- If you have plans for where or to whom your collection should go at a later time, tuck notes of that intention into its storage containers so survivors know your wishes.
- Above all, do no harm.

Glossary: Terms to Know

Acid-free. Materials produced from any cellulose fiber source such as cotton and wood with proper measures taken during manufacturing process. Has a pH of 7.0 or higher. Active acid from bleaching, aluminum sulfate from sizing, or pollutants in the atmosphere may cause the formation of acid unless the paper or board has been buffered with an alkaline substance.

Archival. Non-technical term implying that a material is durable and chemically stable and can safely be used for preservation purposes. No standards exist regarding product or lifespan of materials.

Buffering. Addition of alkaline agents, such as calcium or magnesium carbonate, during papermaking process in order to counteract the effect of acidic contamination.

Conservation. Term used to describe a physical or chemical treatment of an original image to restore its original condition and appearance.

Deacidification. Chemical treatment that neutralizes acid in a material such as paper. Deposits an alkaline buffer to counteract future acid attack.

Desiccant. An agent (silica gel) that removes gaseous water from the air and reduces relative humidity. They can be used in sealed enclosures to protect photographs from humidity. Silica gel can be reused by heating and removing the absorbed moisture.

Mylar D® (polyester). A DuPont trade name for a clear, flexible polyester plastic sheet that is approved for and used to cover photographic prints.

pH Neutral. Has neither acid nor alkaline quality. Rates at 7.0 on the pH scale.

PVC (polyvinyl chloride). A plastic that resembles polyethylene but is not as chemically stable as other plastics and can give off damaging hydrochloric acid as it deteriorates.

Polyethylene (high- and low-density). A chemically stable, highly flexible, transparent or translucent plastic with a low melting point. Used as sleeves for preserving photographic materials when made without surface coatings or additives.

Polypropylene. Stiff, heat resistant, chemically stable plastic. Used for sleeves for photographs, slides or film, and containers. Has less static charge than polyester and better clarity than polyethylene.

Preservation. Action taken to retard or prevent deterioration or damage.

Pressure-sensitive. Adhesive that will adhere to a surface by means of light pressure.

Restoration. Action taken to replace or renew to near-original condition.

Ultraviolet. Band of short wavelength, high-frequency electromagnetic radiations that cause fading and structural damage to artifacts. Not visible on the normal spectrum. Daylight and fluorescent lights are the most dangerous forms.

The use of any trade names or products does in no way constitute a recommendation for this product.

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