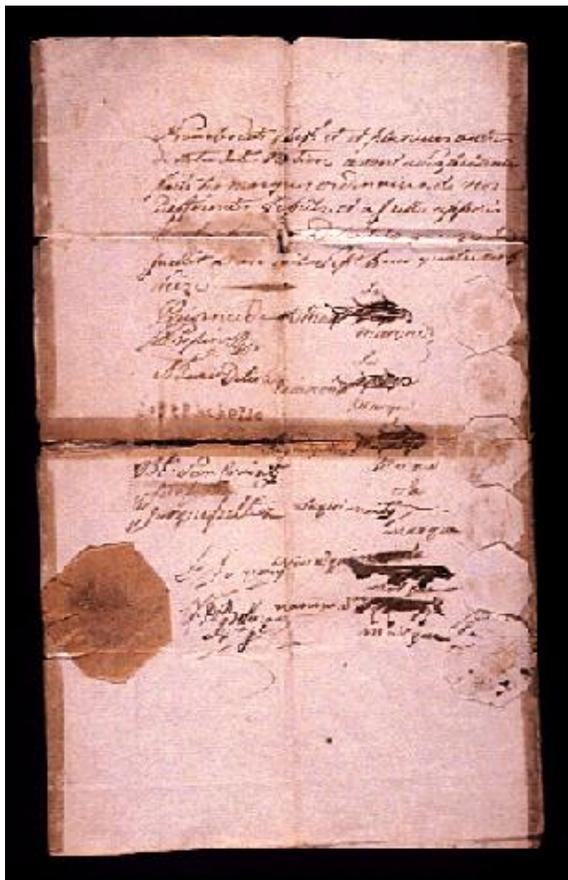


Preserving Memories- Caring for Your Heritage

Memories are an important part of all our lives. Old letters, photographs, scrapbooks, the family bible, and many other things help us to recall our past and the history of our family and communities. All of these things, however, are subject to decay and eventual destruction if they are not cared for properly.

The information found here is designed to help individuals better care for the things that preserve their memories. Press any of the following buttons to obtain information on:

- [Letters, Diaries, Books, And other Paper Items](#)
- [Photographs](#)
- [VCR Tape](#)
- [Copying](#)
- [Scrapbooks, Photo Albums and other Memory Books](#)
- [Sources of Supplies](#)



letter was written. That stain is an example of acid migration. Acid migration not only discolors paper, it increases the acidic content in the area of the stain thus shortening the paper's lifespan.

The Enemies of Paper

The best way to minimize damage to your family records is to properly store your papers away from four hazards that measurably shorten paper's lifespan: heat, humidity, light, and careless handling by people.

Letters, Diaries, Books and other Paper Items

Many families preserve letters, diaries, or other written documents in which family members discuss their life and times. World War II fiftieth anniversary remembrances have led many families to look for a relative's carefully stored letters home from the European theater. Other families have saved newspaper clippings of important family events, such as the announcements of births, marriages, or obituaries. The family bible can often be an heirloom handed from one generation to the next. Often when the letters are brought down from the attic or the clippings retrieved from the back of the closet, family members are upset to see the items are disintegrating.

Understanding the Problem

Since the 1860s all but the most expensive paper has been made from wood pulp. Manufacturers used wood pulp because it was much more plentiful and much less expensive than the cotton fibers they had previously used. Thus manufacturers could sell paper to consumers at a fraction of the former cost. However, paper made of wood included chemicals that had not been found in paper made in the earlier era. The most important change was the introduction of acid. Acid is what causes paper to slowly turn brown and become brittle. Eventually acidic paper will disintegrate into small pieces of confetti.

Exactly how long it takes for a specific piece of paper to self-destruct depends on the exact nature of the chemicals used to make the product and the way in which paper is stored. Newsprint is usually the cheapest paper available and tends to be the first to decay. Newspaper clippings can often show a significant amount of aging in ten to twenty-five years. Other paper will decay more slowly, but any paper over fifty years of age may have developed significant problems.

A second problem created by acid is acid migration. Acid migration is a term used to explain the phenomena in which acid from low quality paper tends to bleed out onto neighboring pieces of paper. A typical example of acid migration occurs when a newspaper clipping that had been enclosed with a letter is allowed to remain in contact with it for many years. When the letter is re-opened a brown stain in the outline of the clipping has often discolored the paper on which the

Heat speeds chemical reactions and causes paper to decay more quickly. The rate of change is dramatic; doubling with every ten degree (fahrenheit) increase in temperature. Humidity can also destroy paper. Humidity does its harm in two ways. Humidity levels above seventy percent promotes mold growth. Rapid changes in humidity can also damage paper. Wide variations in humidity causes paper to "cycle," expanding and contracting as water is drawn from and goes back into the paper fibers. Bright light, particularly sunlight and fluorescent light, can also injure records. Like heat, ultra-violet radiation can speed chemical reactions that harm paper. However, damage from light usually shows up first in ink which fades and eventually disappears. Careless handling is probably the most frequent cause of harm to paper. Particularly as paper ages and becomes brittle, it will easily rip if it is not handled very gently.

Preserving Paper

Storing loose papers properly is an important step in preserving your family records. Proper storage can lengthen the useful life of any piece of paper. Some helpful ideas include:

Store family papers in a cool, dry place, where the humidity stays relatively constant. A bedroom closet is often a good choice particularly if the bedroom or the whole house, is air conditioned. A room where the temperature remains between sixty-five and seventy degrees fahrenheit with a constant relative humidity of about forty-five percent is an ideal environment. Uninsulated attics or damp basements are very poor places to store valuable family papers.

Do not expose paper to bright light for extended periods of time. If you feel strongly that you must frame and display a particular document, mat it in acid-free material, leave a small gap between the item and the glass of the frame, and spend a few extra dollars to purchase glass that filters out ultra-violet radiation. When hanging the item avoid a location where direct sunlight from a window or another source of light will reach it.

Do not store particularly bad pieces of paper touching higher quality paper. If you desire to store a poor quality piece of paper place it between two blank sheets of high quality paper. Acid will migrate into the blank paper, which can be thrown away, rather than into family letters or other heirlooms.

Do store papers opened (not folded), and flat. Fold lines place great stress on paper fiber. As paper ages and becomes brittle folds are the place were paper usually first cracks.

Paper Restoration - A Word of Caution

Over the years, professional conservators have developed a sophisticated array of tools and techniques that can be used to clean, restore and mend documents or books. Successfully using these procedures, however, frequently requires considerable skill, the use of toxic chemicals, and some good luck. Restoration of damaged paper is often expensive, frequently risky, and sometimes doesn't work. In most cases it should only be done by a professional conservator.

The best advice to most do-it-yourself restorers is to do nothing. Home remedies often not only fail to fix the problem but introduce new problems that are even more difficult to fix. It is usually better to store a partially damaged document under good conditions than to try to fix it without professional help. Perhaps the most destructive "home remedy" professional conservators face are repairs done with self-adhesive tape.

Self-adhesive tape should never be used to repair torn or ripped paper, or in an attempt to refasten torn covers to a book. Most tape sticks for only five to ten years. Eventually the tape fall offs, leaving behind a tear or rip imbedded with a sticky adhesive mess that discolors the paper. Even a trained conservator, who could fix the rip or tear in a way that is permanent, will find it difficult and probably impossible, to remove the adhesive and the discoloration from the paper.

Close behind tape in its destructive effect is the practice of lamination. Lamination does not lengthen the natural life of paper and its sticky plastic is virtually impossible to remove. Lamination should not be confused with the professional practice of "encapsulation." Encapsulated documents are placed between two sheets of inert plastic. However the "sandwich" that is created is sealed only around the edges, thus the document is not attached to the plastic in any way.

In general, the best advice for preserving your family papers is to store papers opened, flat, and in a cool, dry place and to restrain yourself and your family from attempting any kind of home repairs to damaged items.

Paper Care - A Checklist

Always store paper records in a cool, dry place.

Do not store paper in uninsulated attics or damp basements.

Always store paper away from bright light.

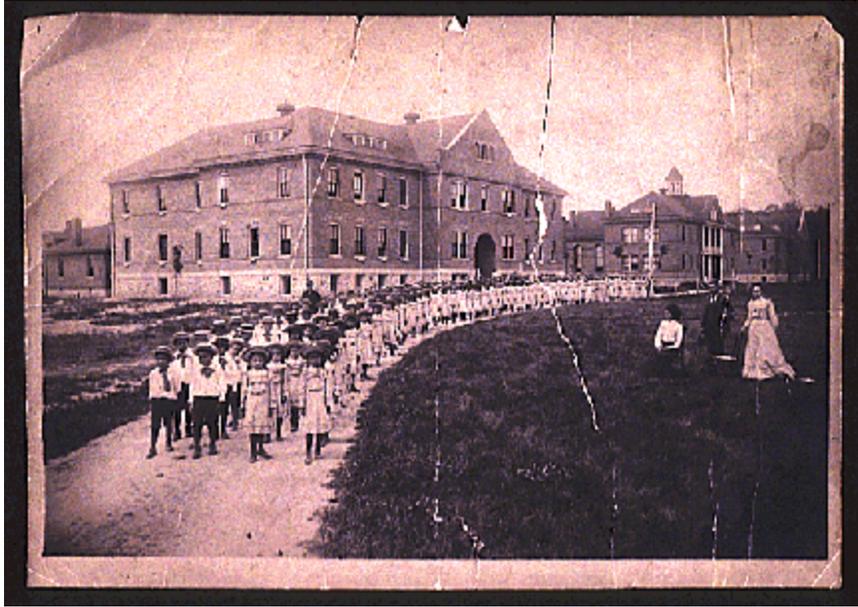
If you choose to frame and display a paper item, always use glass which filters out UV radiation in front of the document.

Store papers opened, rather than folded, and flat.

Separate "bad" pieces of paper from other items by sandwiching "bad" paper between two, blank sheets of quality paper.

Never put pressure sensitive tape on a document.

Never laminate a document.



Photographs

Photographs

Photographs have long been used to capture family memories. Every photographic process, however, is subject to decay and self-destruction.

Understanding the Problem

Photographs employ a process in which a medium which has been coated with various chemicals that react to light is first exposed to a light source to "take" the picture and then is processed using other chemicals that fix and stabilize the image. The negative is then used to create prints on paper that has been coated with even more chemicals. Given the number of chemicals involved, it should not be surprising that no photograph is completely stable. Although in the short run it is insignificant, a small amount of sensitivity to light is always present. Photographs can also

react rapidly and unpredictably in the presence of other chemicals.

All photographs fade over time. Traditionally processed black and white photographic prints may last a century or more. Color photographs, because of the various dyes used to create the color, are very susceptible to color change and fading. In particular color photos that are exhibited, may experience noticeable color change after only ten to fifteen years. Polaroid or other "instant" developing photographs are also likely to be chemically unstable and as a result fade very quickly.

The Enemies of Photographs

Photographs

Photographs are vulnerable to the same enemies as is paper; heat, humidity, light, and mishandling. Because of their chemical nature, photographs also often react negatively to the presence of other chemicals. Even the oils from a person's hands, if left on a photographic print or negative, can eventually cause finger prints to become permanently embedded in the image. Because photographic images are found on light sensitive materials that cannot be made completely stable, bright light is particularly destructive to photographs.

Preserving Photographs

Ideally, photographs should be stored in an extremely cool environment, with color film lasting longest at a temperature of about forty degrees fahrenheit. Few people are willing to go through the expense and trouble of purchasing a refrigerator solely to store their film. More practical suggestions include:

Store photographs in the coolest place in a home that is not subject to high or rapid changes in humidity. Avoid the basement of most homes.

Always handle photographic prints and particularly photographic negatives by the edges. An even better option, is to wear light gloves made of a lint free material while handling photographic images.

Do not expose photographic prints or negatives to bright light for extended periods of time unless the negative from which the photograph was made can be found and is properly stored. If a negative is not available, a copy negative should be made prior to exhibiting the photographic print.

Use high quality color negative film and paper to take and print color photographs. After conducting independent tests for long-term durability, Henry Wilhelm, in *The Permanence and Care of Color Photographs* (1992) recommends among the negative film marketed for the amateur market the use of Fujicolor Super G 200, Konica Color Super SR 200 3M ScotchColor 200 Film or Polaroid OneFilm Color Print Film (ISO 200) in the medium speed range (ISO 160-200). Wilhelm's more surprising finding was that there was great variability in the fading quality of the paper upon which photos were printed. Fujicolor Super FA Type 3 and Fujicolor SFA3 papers could be exposed for fifty years without color fade.

By way of comparison Kodak's most popular papers began to fade after slightly more than ten years. Wilhelm is, in fact, critical of Kodak both for the company's practice of refusing to release data regarding the longevity of color prints printed on the firm's paper (Wilhelm states other companies routinely release this data) and for marketing papers to the public through ads that "suggested that the Ektacolor prints of the time would 'last a lifetime'" while knowing that the papers actually began to fade noticeably in less than a decade. When interviewing professional photographers who will take family photos at weddings or for studio shots it is wise to inquire about the kind of paper upon which they will print the photos.

Photographs: a Checklist

- Store photographs in a cool place that is not subject to high humidity.
 - Store photographs away from bright light. If you choose to display family photographs use UV filtering glass.
 - Always handle photographs by their edges. Better yet, wear gloves when handling photographic items.
 - Select film with longevity in mind.
 - When employing a professional photographer ask that he or she print photos on long-lived paper.
 - Treat color photographs as a temporary medium and assume you will have to have them copied.
-

VCR Tapes

Over the last decade VCR tape has become a favorite way of preserving memories. VCR tape, however, is even more fragile than color photographs and thus individuals who use it to store family remembrances must take great care to use it with caution.

Understanding the Problem

VCR tape is created when metal oxides, lubricants, and plasticizers are "bound" to a "base" of clear polyester tape. This mix of chemicals serves a variety of purposes. Metal oxide records the magnetic impulses that are "read" by the VCR to recreate images on a television screen. Plasticizers help keep the film supple so it is less likely to break or stretch. Lubricants serve a similar purpose by helping to keep the tape moving smoothly through the mechanical transport system that moves the film from one spool, past the VCR "head," the device that "reads" the magnetic pulses recorded on the metal oxide, and on to the other spool.

Each of the component parts of the finished tape is subject to unique problems and a failure of any one of them can make the tape unplayable. Because the mix of component parts is complex even the best quality tape can begin to degrade quite quickly, often within a year or two after its manufacturing. Even under ideal conditions the binder that holds together this mix of chemicals is very delicate and it is usually quite easy to scrape off parts of the chemicals from the base. For whatever reason as degradation occurs the image that is played back on a television screen becomes poorer and poorer, until it can no longer be viewed.

The Enemies of VCR Tape

VCR tape is subject to harm from a variety of sources. Just as with paper and photographs heat can speed the chemical reactions that cause the tape to fail and humidity can encourage the growth of various biological agents that can destroy the tape.

"Binder breakdown" is a frequent cause for tape failure. Like all adhesive agents, as the binder ages it begins to lose its "stick." As this happens microscopic pieces of oxide as well as the other chemicals imbedded in the binder slowly fall away. As each bit of oxide is lost, a small piece of information is lost creating various problems when the tape is played.

Because VCR tape can only be viewed by playing it through a complicated mechanical device, a VCR, it is also frequently damaged by mechanical problems within a VCR. Dirt is the most frequent problem. Dirt, even microscopic particles, if located in strategic spots on the transport mechanism or VCR head can cause continual scratching of the VCR tapes. Each scratch scrapes off a bit more material from the polyester tape base and each loss of material further degrades the image.

Preserving VCR Tape

There is no long-term strategy for preserving VCR tape. It is reasonable to expect that most VCR tape, for one reason or another, will be unplayable after approximately a decade. Within this short life-span, however, it is possible to take steps that will keep the tape and the images preserved on the tape, in better condition, thus allowing for a higher quality copy of the tape to eventually be made.

Practical suggestions for maintaining VCR tape in good condition include:

Buy name brand VCR tape. The chemicals used by various manufacturers, quality control practices, and other procedures vary dramatically between manufacturers, with "no-name" tape usually being made as cheaply as possible. Lacking good studies on the reliability of various brands of VCR tape, a consumer can at least fall back on the advice that you often get what you pay for, and buying the cheapest tape available is asking for preservation trouble.

Make a "preservation" copy of the VCR tape as soon as it is shot. This can be done at home by mating two VCRs or it can be done at many shops which do VCR repairs. Check the preservation copy once a year, but otherwise never play it. This "pristine" copy will serve you well when the time comes to copy the tape onto a new tape. Pull out a second, "user" copy of the tape to show friends, neighbors, and relatives. Although with each viewing the user copy will slowly degrade, the images will be preserved in the best possible state on the "preservation" copy.

VCR tape should be viewed and rewound annually. Annual viewing makes it possible to detect problems before they lead to the catastrophic failure of the tape. Annual rewinding helps avoid a number of problems that can occur as the tightly wound VCR tape rests up against itself.

Always use a clean, well-functioning VCR machine to play the tape. Microscopic particles of dirt can cause irreparable damage to the tape as it races past the VCR head. Professional cleaning of a VCR machine, including demagnetization of the head, is always a good idea before the family tapes are pulled out for their annual screening. It is particularly important to make sure the VCR has recently been serviced before playing the preservation copy of your tapes.

Assume VCR tape will have to be copied. The medium of tape is very fragile and subject to a variety of fatal harms. Plan on copying tape at least once every ten years.

VCR Tape: A Checklist

Buy name brand tape.

Make a "preservation" copy of family tapes that will be used for subsequent copying.

View and rewind VCR tape annually in order to find image degradation before significant tape failure occurs.

Play family tapes (particularly a preservation copy) through a recently cleaned and adjusted VCR machine.

Assume VCR tape is a temporary medium and plan on regularly copying the tape.

Scrapbooks, Photo Albums and other Memory Books

Many people assemble "memory books" to help them record the history of themselves or their family. Commonly these involve an artifact in a "book" format, often 8.5x11 or 11x14 inches in size. Pictures, newspaper clippings, certificates, letters, tickets, souvenir programs, and a host of other memorabilia find their way into these books.

Understanding the Problem

Although memory books in the form of scrapbooks and photo albums are sold in stores across the country and used by thousands of people to preserve their family history, most memory books represent a witch's brew of problems that cause professional conservators to despair. The three most important problems found in scrapbooks are the material out of which they are made, the material used to fasten items into the scrapbook, and the mix of material placed in the book.

Most commercially purchased photo albums or scrapbooks are made of the most inexpensive paper available and thus have extremely high levels of acid. As a result not only with the scrapbook pages become brittle quite quickly but the acid from the poor paper will migrate into the family material placed in the scrapbook, shortening your the life of those items.

Most commercial scrapbooks are also bound together quite tightly. This tightness can cause significant problems as you add material to the pages often doubling or tripling the books original thickness. The growing thickness of the book causes the book to bulge and puts great strain on the binding. A binding under this type of stress will usually break very quickly.

Family papers have to somehow be fastened into the scrapbook. Most often this is done with some form of glue that is either purchased separately or has been imbedded onto the pages of the scrapbook by the manufacturer. In either case, after many years the glue loses its ability to bind materials together but leaves behind a permanent sticky residue that discolors and acidifies the material placed in the scrapbook.

The mix of material placed in a scrapbook can also cause problems. Photographs, highly acidic newspaper clippings, and other items often create peculiar chemical mixes that can cause unpredictable results.

Preserving Memory Books

The soundest advice regarding memory books is that you avoid them. Storing family history material separately is almost always better in the long run than trying to group the material together in a single volume. However, if you would like to create a memory book some practical suggestions include:

Do not use scrapbooks or photo albums found in department or discount stores. Rather purchase photo albums and memory books from catalog suppliers that sell archival quality products. A list of suppliers is included at the end of this document. Archival quality memory books, however, will cost at least two to three times the price of those sold in discount stores.

Do not use glue. Although a few archival quality (non-acidic, non-staining) glues are sold, there is no consistent labelling that tells the average consumer what mix of chemicals are contained in glue, nor can past tests of commercial glues be relied on since manufacturers are known to change their formulas without warning. Rather purchase chemically inert, mylar photo holders and insert items in these. These often come in sheets which have a variety of pocket sizes and are designed for insertion into a three ring binder.

Segregate material by type. Do not place newspaper clippings, letters, and photos all in the same pocket. Rather put each in its own pocket, using the plastic sheets to buffer one item from the other.

Store large scrapbooks flat rather than on end.

Use three-ring binders as an alternative to bound memory books. Three ring binders allow adequate room for the materials placed in the memory book. Binders neither crush the material nor do they have bindings that can be stressed and break. Many archival suppliers make available binders with attractive cloth covers that look very much like a bound volume.

Label items. Among the most frustrating experience of a family historian is to come upon great-aunt Lydia's photo album only to discover that none of the pictures are labelled. Great-aunt Lydia died in 1966 and today no one can identify the people in the photographs she carefully guarded. Always take the time to explain in writing the items in a memory book. Note who are in the pictures, as well as when and where the photos were taken. If letters are included that are not self-explanatory, for example "Lou" writing to "My Sweetest," write down who Lou and his sweetheart were. Among the goals of anyone who creates a memory book should be to bequeath useful information, not frustrating puzzles, to future family members.

Memory Books - a Checklist

Avoid scrapbooks or photo albums sold at most retail outlets
Purchase scrapbooks or photo albums from archival supply catalogs

Do not use glue or pressure sensitive tape in your scrapbook.

Mylar envelopes usually are the best way to store scrapbook items.

Segregate material by type.

Label material. For photographs include the full names of the individuals, and the date and place the photo was taken.

Store memory books flat rather than on edge.

Three ring binders are a useful substitute for bound memory books.

Copying: The Ultimate Solution

No matter how well anything is stored eventually the item will degrade to the point where it is either prohibitively expensive to repair it or where repair is no longer possible. When this point is reached copying is the only practical way to preserve the material into the future.

A Word of Caution Although modern copying technology can preserve items otherwise destined to be lost, most copying technologies do not reproduce the original item with total accuracy. Small amounts of clarity are lost each time an image is copied. This loss of clarity becomes more pronounced over generations of copies, as anyone can attest who has photocopied a copy of a copy and then compared it to the original. Digital technology can create an exact duplicate of the original, however because digital technology is stored in electro-magnetic media, like VCR tape it is susceptible to the very rapid decay.

Some practical suggestions

Despite its limitations, copying is the only practical way to preserve many items. If you are considering copying material some ideas to keep in mind include:

Paper items can be either photographed or copied using a photocopier. The image placed on paper by a photocopier is very stable, however, care should be taken to place the image on good-quality paper. Acid-free paper is best, and a high quality bond paper is a good second choice. Paper marketed as "photocopier paper" and loaded into most coin operated photocopiers is usually of poor quality.

When photographic copies of documents or photographs are made care should be taken to select a photographer experienced in copy work. Copy photography is as much an art as a science, and an experienced hand can often obtain a better copy image.

Contemporary color photographs of important family events, such as wedding photographs, will probably need to be copied about twenty-five years after they are taken in order to preserve their original color hues.

Contemporary VCR tapes of important family events will probably need to be copied about ten years after they are taken. If you have important family images on VCR tape you should pay particular attention to changing technology. No one wants to discover that their family tapes can be shown only on the last Betamax machine in America.

Material that has been glued in scrapbooks is very difficult to copy. Usually the only solution is to destroy the scrapbook in order to make good copies of the items found within the volume.

Suppliers

Although these are not the only vendors of archival material, these will mail catalogs upon request and offer supplies in small quantities.

Light Impressions
P.O. Box 940
Rochester, NY 14607-3717
1-800-828-6216
Website: www.lightimpressionsdirect.com

University Products
P.O. Box 101
Holyoke, MA 01041-0101
1-800-628-1912
Website: www.universityproducts.com

Conservation Resources
8000-H Forbes Place
Springfield, VA 22151
1-800-634-6932
Website: www.conservationresources.com

- **Advice & Resources**

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