PRESERVATION

The Library of Congress

Care, Handling, and Storage of Photographs

INFORMATION LEAFLET

(see also)

BIBLIOGRAPHY
STANDARDS
SUPPLIES

Originally published by:
IFLA Core Programme Preservation and Conservation
International Federation of Library Associations and Institutions

Introduction Structure of Photographs Identification Common Processes Collection Management Deterioration Storage Handling

Introduction

Photographic materials have complex physical and chemical structures that present special preservation challenges to the librarian and archivist. Since the birth of photography in the late 1830s, many different photographic processes and materials have been utilized, each subject to deterioration through time and with use. Although deterioration is an ongoing natural process, nevertheless much can be done to slow the rate at which it takes place in photographic images.

Deteriorated photographs of extreme artificial value may require specialized conservation treatment by a professional photograph conservator, often a costly, skill-demanding, and time-consuming procedure. For the majority of photographs in research collections, single-item conservation of deteriorated photographs is probably not a feasible or a cost-effective preservation solution. Instead, promoting proper care, handling, and storage through staff and user education will have a more lasting, positive impact on the preservation of a collection.

This publication is intended to provide a basic understanding of how and why photographs deteriorate and what can be done to slow this process. The information below focuses on the photographic formats most commonly found in research libraries and archives, namely black-and-white silver gelatin prints, glass plate and film base negatives, and color transparencies.

Structure of Photographs

Photographs are composite objects. A typical photograph consists of three different parts:

1. Support — The support layer may be glass, plastic film, paper, or resin-coated paper.
2. Binder — The emulsion or binder layer, most commonly gelatin, but also albumen or collodion, holds the final image material or image-forming substance to the support; and
3. Final image material — The final image material, made of silver, color dyes, or pigment particles, is usually suspended in the emulsion or binder layer.

Many different final image materials and binders have been used over the years. Today, however, almost all black-and-white photographs are composed of silver suspended in gelatin.

Identification

Identification of various types of photographs requires a basic knowledge of the history of photographic processes. Curators and archivists charged with responsibility for photographic collections must be at least somewhat familiar with the various photographic processes and know when they were used. This information is needed not only for cataloging but also for making informed preservation decisions. Processes must be identified in order to distinguish between later copies and vintage originals. In addition, storage needs differ with types of photographic materials. Photographs made by processes that may offgas and damage
other materials must be stored separately. The ability to identify photographic processes is also a prerequisite for selecting appropriate storage enclosures for photographs. For example, acetate and nitrate film negatives should be stored in individual buffered paper sleeves because plastic enclosures trap harmful effusing from the film base which further accelerates deterioration of the image and film. Many excellent books devoted to historic photographic processes are available.

Some Common Photographic Processes, When They Were Introduced, and When They Were Most Popular

<table>
<thead>
<tr>
<th>Year</th>
<th>Process/Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1839-1860</td>
<td>Daguerreotypes</td>
</tr>
<tr>
<td>1850-1890</td>
<td>Salted paper prints</td>
</tr>
<tr>
<td>1851-1890</td>
<td>Glass plate negatives (general)</td>
</tr>
<tr>
<td>1860-1885</td>
<td>Collodion wet plate glass negatives</td>
</tr>
<tr>
<td>1880-1920</td>
<td>Gelatin dry plate glass negatives</td>
</tr>
<tr>
<td>1880-1951</td>
<td>Nitrate negatives (introduced by Kodak; ceased production in 1951; dates of production outside the United States vary)</td>
</tr>
<tr>
<td>1850-1900</td>
<td>Albumen prints</td>
</tr>
<tr>
<td>1885-1930</td>
<td>Gelatin and collodion printed-out photographic prints</td>
</tr>
<tr>
<td>1890-1900</td>
<td>Black-and-white gelatin developed-out photographic prints</td>
</tr>
<tr>
<td>1934-</td>
<td>Acetate negatives introduced for sheet film</td>
</tr>
<tr>
<td>1925-</td>
<td>Chromogenic color film and transparencies (introduced by Kodak; Kodachrome® was the first process)</td>
</tr>
<tr>
<td>1948-</td>
<td>Distant black-and-white process (introduced by Polaroid; nabla first, then black-and-white in 1950)</td>
</tr>
<tr>
<td>1960-</td>
<td>Polyester film introduced</td>
</tr>
<tr>
<td>1963-</td>
<td>Distant color print process (introduced by Polaroid; Polacolor was the first process; SX 70 was introduced in 1972 and Polacolor 2 in 1975)</td>
</tr>
</tbody>
</table>

Collection Management

Collection management includes four basic components: inventory, appraisal, cataloging, and proper housing and storage. Inventory is needed to determine which photographic processes are represented in the collection and which prints are mounted, unmounted, or in albums. Appraisal of the collection entails evaluation based on value, appropriateness of the collection to the mission of the institution, and an assessment of housing and preservation needs. Cataloging and arrangement involves identifying each item, dating it, and assigning an accession number.

Materials in the collection, as well as all incoming materials, should be screened systematically during the inventory and appraisal steps in order to identify items with special preservation problems that require conservation treatment or stabilization until treatment can be obtained. Such actions may include protective boxing or stiff card supports underneath brittle or broken photographs. The main problems to look for are: (a) inherent problems affecting the structure of the print, such as extreme fragility, flaking binder layers, or other physical damage; and (b) external problems, such as active mold, insect infestation, or the use of inappropriate pressure-sensitive tape or rubber cement adhesives.

Catalog records should be prepared for each item in the collection that state the nature of the object, its physical description, and an evaluation of its condition. Where large numbers of similar materials are concerned, a finding list containing general or characteristic information may suffice in lieu of individual item records. Cataloging and access tools can support preservation by minimizing the need for
researchers to handle original photographs or one-of-a-kind images, including negatives for which no reference copy exists. If good cataloging and finding aids are provided, the need for researchers to browse through originals is reduced. Some examples of finding aids that promote access to images (but not to originals) are: (a) a small 35mm photo duplicate contact print of the original attached to a catalog card; (b) photographic images stored on videodisk; (c) photographs reproduced on microfilm or microfiche; and (d) photocopies of originals.

Once the collection has been inventoried, appraised, cataloged, and arranged to library and archives standards, each photographic medium (prints, film base, and glass plate negatives, and slides) should be housed and stored separately if possible. Items that are too deteriorated to be handled without damage should be duplicated. A photocopy can be made from the duplicate for research purposes. Once a deteriorated original is duplicated, it may be withdrawn from service to researchers.

Comprehensive collection management includes proper maintenance of and storage for the collection. Protective housings (to be discussed later) can minimize handling damage and wear and tear. A proper storage environment is the best defense against deterioration, since photographic processes are affected by harmful chemical gases, high temperature, and improper relative humidity levels.

Deterioration

Four principal factors contribute to photographic deterioration: poor environmental storage conditions, the presence of residual photographic processing chemicals or the use of exhausted processing chemicals, poor storage enclosures and shelving conditions, and rough or inappropriate handling that results in unnecessary wear and tear.

Environmental Factors

The environmental factors that affect the preservation of photographic materials are relative humidity and temperature, air pollution, light, and housekeeping practices.

Relative Humidity and Temperature

All photographic materials are sensitive to high, low, and fluctuating relative humidity (RH), which is a measure of how saturated the air is with moisture. High RH affects all components of photographs. High RH causes a gelatin binder to become soft and sticky, making it vulnerable to mechanical damage and image deterioration. Low RH causes the binder to shrink and crack and the secondary support to curl.

High temperature speeds up the rate of deterioration. The higher the temperature, the faster a photograph deteriorates, especially at high RH levels. High humidity and temperature, combined with the damaging effects of air pollution, are especially damaging and cause silver images to oxidize and color dyes to shift and fade.

High temperature and high humidity conditions may contribute to the growth of microscopic mold spores on the image-containing layer and on primary and secondary paper supports. Once active mold infests photographic materials, it is actually impossible to remove without damaging the photograph. Mold tends to develop when the temperature is above 75-80°F and the RH is greater than 60%.

Temperature and RH fluctuations, or "cycling," result in chemical and mechanical changes that are especially damaging to photographs. Cycling promotes the movement of moisture in and out of a photograph, speeds up the rate of chemical deterioration of primary and secondary supports, and promotes the breakdown of the binder that holds the final image material to the support. When both humidity and temperature are high, or when materials undergo temperature and RH cycling, structural damage and the rate of chemical deterioration are greatest.

The ideal RH for storage of a mixed collection containing historical photographic prints, slides, and negatives is between 30% and 50% without cycling more than 5% a day. If only photographs are stored in a given area, 30-40% RH is best. If photographs are stored with paper, parchment, or leather materials, it may be necessary to maintain 40-50% RH to avoid placing unwanted stress on non-photographic materials. However, some materials, such as negative films and transparency films (nitrate and acetate plastic) and some historic glass plate negatives, will deteriorate further at 40-50% RH. The deterioration of acetate and nitrate is strongly dependent on RH even at moderate levels of 40-50%. Recent American National Standards Institute (ANSI) specifications recommend 20-30% RH for long-term storage of "safety" film (acetate and polyester base) to assure maximum life expectancy. Recent
research (Reilly, 1991) indicates that historic nitrate film also benefits from these same storage conditions. Glass plate negatives should be stored at 30-35% RH to minimize glass decomposition and fading (McCabe, 1991).

Storage temperatures should be kept as low as possible but high enough to allow reasonably comfortable working conditions for staff. The highest recommended storage temperature for black-and-white negatives and prints is between 65° and 70° F. Daily fluctuations greater than 5° should be avoided. Color materials, which fade more in elevated temperatures, should be kept in cool storage whenever possible (a set point within the range of 40-65° is best), or in cold storage (25-40° F) whenever feasible. Generally, the colder the storage the better. When choosing a system, keep in mind that cold storage units are expensive to maintain, especially units for lower temperatures. Refrigeration may present low cost options for small, valuable collections of color materials (Wilhelm, 1990). Caution must be exercised if using cold storage systems to avoid elevated RH or water condensation on valuable original photographs. All cool or cold storage systems limit access to the collections because the photographs must equilibrate to ambient temperature and RH before they are used in order to avoid moisture condensation.

Air Pollution

Air pollution attacks photographs in the form of: (1) oxidant gases, (2) particulate matter, (3) acidic and sulfiding gases, and (4) environmental fumes. Oxidant gases are composed primarily of pollution created by burning fossil fuels such as coal and oil. Nitrogen oxides (nitric and nitrous) are the major gases that threat photographic images. Nitrogen oxides are produced by combustion, or as in automobile engines. Ozone occurs naturally in the upper atmosphere, but can be formed in the lower atmosphere when sunlight interacts with nitrogen dioxide. Ozone is also produced by some electrostatic copiers. Oxidant gases cause photographic images to fade by chemically interacting with the silver image material.

Particulate matter, such as soot and ash particles from manufacturing processes, exists in abundance outdoors and can enter the library archives through heating and cooling ducts, doors, and windows. Particles, which may be greasy, abrasive, and chemically or biologically active, settle on shelves and on collection materials and create dust that is spread to other materials when they are handled.

The by-products of combustion combined with moisture in the atmosphere pose another risk to photographic materials. When fossil fuels, such as coal and oil are burned, nitrogen and sulfur dioxide are produced. The reaction of nitrogen and sulfur dioxide with water in the atmosphere produces nitric and sulfuric acid. These acids attack all components of photographs and cause silver images to fade and paper and board supports to become brittle.

Environmental fumes can be especially damaging to photographic images even in small quantities. Peroxides from untreated wood, paints, and varnishes; poor quality paper or printed products in close proximity to photos; and the fumes from common cleaning solvents can cause images to oxidize and fade.

Air entering the storage area should be filtered and purified to remove gaseous and particulate matter. A well-designed filtration system includes cellulose or fiberglass filters that remove particulate matter, and a charcoal absorption system that filters out gaseous pollutants. Air filters must be changed regularly to be effective. Air circulation should also be checked periodically. There should be no stagnant air pockets, or drafts that bring airtied outside air into storage areas. Storage cabinets, enclosures, and boxes may provide some protection from gases. Many photocopiers emit ozone, which is damaging to photographs, so their use near collection storage areas should be avoided. Do not permit unsupervised cleaning or painting of storage areas. Do not allow unknown cleaning materials or those containing chlorides and other bleaches, oil-based paints, or varnishes to be stored or used near photographic materials. Avoid storing photographs in freshly painted rooms since paint vapors can interact with the silver image material causing it to fade. Use only mild solvents such as soaps and water-based latex paints in a well-ventilated area to clean and paint photographic storage areas. Ideally, latex-painted display cases or storage areas should be allowed to dry for at least a week before use with photographs.

Light

Well-processed black-and-white silver gelatin prints and negatives are essentially stable to moderate amounts of light. Primary and secondary supports can be seriously damaged, however, when exposed for extended periods to visible light in
the 400- to 500-nanometer range, and to ultraviolet (UV) light in the 300- to 400-nanometer (near ultraviolet) region. Damage caused by light is cumulative and depends on the intensity and length of exposure. Sunlight and standard fluorescent light are both strong sources of UV. Color slides are particularly susceptible to fading when exposed to both visible and UV light. For example, Kodachrome® slides can fade significantly within 10 minutes of projection, although Kodachrome® has excellent color stability in dark storage.

Historic photographs and color photographs should be kept at lower light levels than modern black-and-white photographs. Light levels in exhibits should be kept as low as possible, but high enough to allow patron viewing. Levels for historic and color photographs should be in the range of 3-10 footcandles (30-100 Lux). Although some modern photographs can be exhibited under much brighter conditions (up to 20 footcandles), it is best not to exceed 10 footcandles whenever possible. Ultraviolet light levels should not exceed 75 microwatts per square foot. A UV meter is required to measure ultraviolet light levels; incandescent light levels can be measured with a photometer or even a camera light meter (Canadian Conservation Institute, Notes).

Reading room lights should be kept at a comfortable viewing level. Windows and fluorescent lights in reading rooms and storage areas are often chief sources of damaging ultraviolet light. The installation of low-UV-emitting bulbs or UV-absorbing fluorescent bulb sleeves can help eliminate this problem. Window glazing or the installation of window shades may also help. Low-UV-emitting bulbs and sleeves are available from several manufacturers. Light levels in storage areas can also be controlled by the use of timed shut-off switches. Dark cloths or sheets of folder stock (heavyweight paper) or mat board should be available in reading rooms for covering objects when not in use by readers.

Photographs should be covered if they are not immediately returned to storage after use.

Housekeeping

Insects (silverfish, cockroaches, beetles) and rodents (rats, mice, and squirrels) are all attracted to photographic materials. In addition to eating materials, they also foul the storage area and materials with their droppings. They make nests that can be difficult to locate and remove. A good policy is to prohibit eating or drinking where collections are stored. Floors, shelves, boxes, and cabinets should be dusted or vacuumed, or both, on a regular basis. Avoid storing collection materials on the floor where they are more likely to be damaged by insects and rodents or water leaks.

Chemical Processing and Image Stability

Major silver deterioration occurs when photographs are not correctly processed and washed; that is, when exhausted fixer is used or when photographs are not fixed for a sufficient time, or when washing is inadequate. Improper washing fails to rinse residual thiosulfate complexes (fixer) from the film or paper. Residual fixer left in the photograph reacts over time and causes the image, binder, and support to turn yellow or brown and the silver image to fade. High temperatures and humidity speed this process. Photographs that were not well fixed remain light sensitive and may darken when exposed to light. Damage from residual chemicals occurs with time and can go unnoticed for years. To prevent this type of damage insist that all photographic chemical processing and development be done to ANSI standards, especially when duplicating negatives, making reference prints from collection negatives, and if feasible, when acquiring new photographs from photographers.

Storage Systems and Enclosures

Proper storage for photographic materials is an important preventive measure that stabilizes delicate or fragile materials and provides basic care for all materials in the collection. Storage cabinets and enclosures must be chosen and used carefully, however, so that they do not contribute to the deterioration of collection materials. Photographic materials can be seriously damaged if stored in cabinets made of inferior materials that offgas harmful chemicals or that do not provide adequate physical protection. Damage is also caused when photographs are stored loosely in oversized containers or too tightly in overstuffed drawers. Prints stored loosely in a file drawer will slump and curl, for example, and be vulnerable to damage each time the drawer is opened and items are handled. Glass plate negatives are especially fragile and will break when crowded into file cabinets unprotected or stacked on top of one another.

Storage furniture, including cabinets and shelves, should be made of non-combustible, non-corrosive materials such as stainless steel, anodized aluminum, or steel with a powder-coated finish. Shelves made of wood and wood
by-products should generally be avoided since they contain lignin, peroxides, and oils that can offgas or migrate to photographic materials. New baked enamal shelving units may offgas harmful chemicals if not properly cured during manufacture.

Prints, negatives, and slides can be damaged by enclosures that are poorly designed or are made of inferior materials. Acidic chemical agents from poor quality materials can migrate to photographs and destroy the images they were meant to protect. Poorly designed enclosures can produce the same result.

**Materials**

Many commercially available enclosures are labeled "archival" or "acid-free." However, some of these same items may contain lignin, dyes, sizing agents, coatings, plasticizers, or other harmful additives. Never use enclosures made from unbleached woodpulp paper, glassine, or polyvinyl chloride (PVC) to house or store photographs. Avoid products made from colored papers because they often contain dyes or inks that are unstable and will migrate or bleed onto photographs or otherwise adversely affect the photographs stored within. For an enclosure material to be completely safe it must meet or exceed the specifications in ANSI standard T90-1998 (or the latest revision) including the Photographic Activity Test (PAT). Purchase enclosures materials from a reputable supplier.

**Design**

Paper envelopes are often used to store prints and negatives. Adhesives used to seal envelopes may cause staining and fading of the silver image. Thus, the emulsion (or image) side of a print or negative should be placed away from the seams so that staining or fading of the front is less likely. When envelopes with seams are used, the seams should run along the sides of the envelope rather than down the center. A good approach to housing photographs is to provide several layers of protection by first placing photographs into sleeves or envelopes, then into folders, and finally into document storage boxes. This procedure may not be feasible in every situation or with every type of collection. In some cases, grouping photographs into folders and then into storage boxes may suffice.

**Paper or Plastic?**

The choice between paper or plastic enclosures should be based on the type of photographs to be housed and their condition, the anticipated amount of use the materials will receive, financial resources, and environmental storage conditions. Paper enclosures usually cost less than plastic, but items that are used frequently can be abraded by repeated removal from and insertion into paper enclosures. Paper sleeves and envelopes should be made according to ANSI specifications, which recommend that the paper have an alpha cellulose content of 87% and contain no lignin, groundwood, or calcium sizing. The paper should be buffered to a pH of 9.5. Unbuffered paper, (tending to have a pH of 6-7) may be preferable for some processes such as cyanotypes. Buffered paper is preferred for acetate and nitrate films, platinum, prints, and prints mounted on acidic boards.

Plastic enclosures are preferred for frequently-used collections because they protect photographs from finger prints and provide physical support. Plastic enclosures should be made from an inert plastic such as polyester, polyethylene, or polypropylene. These plastics are generally considered non-damaging and may be used safely with many photographic materials. Avoid all plastics that have fillers, coatings, or UV absorbers. Avoid the use of polyester, polyethylene, and polypropylene that has a hazy film on the surface, which indicates that the plastic film is coated or is heavily plasticized. Avoid using adhesives or fasteners that may cause chemical or physical damage, such as rubber cement, pressure-sensitive tape, paper clips, or rubber bands. Plastic enclosures should not be used with nitrate or early acetate films.

**Suggested Storage Methods**

**Prints.** An ideal storage method for artificially valuable photographs is to place the print inside a polyester "L" sleeve with a piece of 2-ply board behind the print for added support. A polyester "L" sleeve is made from two pieces of polyester placed on top of one another and joined along two adjacent edges. Place the sleeve photograph into a buffered pH folder and into a document box. Prints larger than 11 by 14 inches should be shelved horizontally. If vertical storage is chosen, be sure the box is snugly filled, or use a spacer to fill unused space to prevent photographs in the box from slumping. If vertical shelving is chosen, make certain the document box is well supported on the shelf. A less costly approach for large collections or collections
that receive little use is to place the photograph into an "L" sleeve or a folder and use the 2-ply support only for brittle items.

Oversized prints. Place oversized prints in a folder, interleaved with paper, or sleeve in polyester as above. The housed photographs should then be stored in a large document box on shelves or in map storage drawers. Rolling should be avoided since the photograph may crack when it is unrolled for use.

Framed photos. Remove the photograph from the frame and store as above. If framed storage is available, the framed photographs should be protected from light exposure with dark cloth coverings. If the photograph is stored framed, check that the matting is appropriate and of high quality materials.

Glass plate negatives. Intact glass plates may be stored individually, in sealed or seamless paper enclosures. The plates should then be arranged vertically on their long edges in document storage boxes, which can then be stored on open shelving or in cabinets. Seamless sleeves are best for low-use negatives, such as those that have been retired from darkroom use. Shelving with adequate strength is needed to hold the weight of the boxed glass plate negatives. Boxes should be clearly labeled "fragile/glass" and "heavy". Fuller 2-ply board or corrugated board should be used to fill out partially filled boxes to minimize jostling of plates during handling. Plates larger than 5 by 7 inches are ideally stored in cabinets with rigid metal dividers spaced every 1 to 1 1/2 inches. Plates should always be placed on their long edge for vertical storage.

Broken glass plates, or those with deteriorated image layers. Damaged plates should be stored in sink made constructed to guidelines suggested by McCabe (1991) with materials that meet the ANSI PAT test. Cracked plates should be supported with a piece of glass or lignin-free ragboard until they can be duplicated, safely taped, or examined by a professional conservator. The storage and stabilization of damaged glass plate negatives should be done with the consultation of a conservator.

Nitrate negatives. Cellulose nitrate film was manufactured between 1889 and 1951 in the United States. It was produced into the 1960s in other countries. Kodak was the first to manufacture nitrate film, but it was manufactured by other companies worldwide. Nitrate film is inherently unstable and becomes seedy, sticky, and brittle with age. In large quantities nitrate film can also be a fire hazard, although this risk pertains more to motion picture film than to still photographs stored in individual paper enclosures. Nitrate deteriorates in images, beginning with a breakdown of the cellulose nitrate plastic support. As nitrate deteriorates it poses a threat to other types of photographs stored in the area by emitting oxides of nitrogen, which attack the silver image, the gelatin binder, and eventually the support base of other papers and films. Nitrate materials should be identified, accurately duplicated, housed in buffered paper enclosures (never plastic), and stored away from other collection materials in a well-ventilated room. Fire codes may require that the nitrate materials be stored separately in fireproof cabinets, in vaults, or completely off-premises. Storage at low temperature and low RH greatly slows the deterioration of nitrate film.

Cellulose acetate negatives. Starting in the 1950s cellulose nitrate base film was gradually replaced by "safety film" or cellulose acetate films (diacetate, triacetate, acetate propionate, acetate butyrate). All cellulose ester films, including diacetate and triacetate, tend to shrink when plasticizers and solvents introduced during manufacturing evaporate out over time and cause the film base and the gelatin emulsion to cockle and distort. When this happens, the emulsion layer wrinkles and delaminates from the film base. Eventually the image is distorted by the network of wrinkles or channels formed in the emulsion layer. In addition, the film base becomes increasingly acidic and decomposes. The smell of acetic acid is a sign that the cellulose acetate film base itself is deteriorating and that damage is occurring. Triacetate film, introduced in 1948, is the most stable of the acetate films and is in wide use today. All acetate films should be inspected periodically for signs of deterioration. Deteriorated items should be duplicated before damage worsens and should be stored in buffered paper sleeves, under very stable environmental conditions, while awaiting duplication. Unstable, early acetate negatives should be stored separately from prints in a well-ventilated storage room. Plastic enclosures may be used for recently produced safety film negatives (acetate or polyester) that are expected to receive use. Storage at low temperature and low RH greatly slows the deterioration of acetate film.

Color transparencies. Virtually all color processes are inherently unstable because the final image material consists of organic dyes rather than silver or pigment particles suspended in gelatin. Of the many color processes commercially available, the Cibachrome process is the most stable. Exposure to light will cause most color
dyes to fade, but some color dyes will also fade in the dark. In general, high temperatures speed the rate of color fading. Color slides should be housed in suitable plastic sleeves or lignin-free slide storage boxes. Color separations of deteriorated color materials can be made that preserve in silver the three dye layers of the original color image. This, however, is a costly process and may not be feasible for institutions with many color slides. An alternative is to place slides in cold storage (25-40°F and 20-60% RH), which will slow color fading and image loss.

Albums, scrapbooks, and mounted photographs. Historical print mountings were often made of acidic, unstable materials. Many over-the-counter adhesives used to mount photographs into albums and scrapbooks are acidic and will eventually discolor, become brittle, and damage materials. When acidic paper mounts become brittle, the photographic image itself is at risk because of breakage. Mounted photographs that are fragile or brittle may be stabilized with a rigid support such as 4-ply matboard inside a protective enclosure or by placement into a sink mat for protection.

Albums can be wrapped in paper and placed in a document box or in a fitted protective enclosure. On rare occasions albums may be given full conservation treatment, especially if they are particularly valuable. However, this should be the exception rather than the rule. Heavily used albums or scrapbooks should be photographically reproduced. Interleaving should be done judiciously because it adds bulk to an album and places undesirable stress on the binding. Examples where album pages may benefit from the protection provided by interleaving include the following: photographs that are glossy or easily matted, or both; photographs that have fiber mats, platinum prints, and photographs with tape or adhesive applied in such a way that it may come in contact with other items in the album.

Handling

The risk of damage to materials is increased when researchers and staff who are responsible for photographic materials are not trained in the proper care and handling of those materials. Inexperience, neglect, and carelessness account for a significant percentage of damage to photographs. Repair of photos with pressure-sensitive tape, marking original prints with ink, or felt-tip pens, and exhibition of materials under inappropriate conditions are examples of negligence. Neglect also includes the lack of a disaster response plan, inadequate security precautions, and poor collection management procedures that require valuable negatives to be handled frequently. Carelessness includes rough handling during cataloging, housing, and viewing, and damage to materials as a result of inadequate transport systems.

When handling photographs and negatives, be sure that hands are freshly washed, wear clean lint-free cotton gloves, and avoid touching the photographic surface. If a photograph must be moved a short distance or turned over during examination, use an auxiliary support (such as a piece of Flexiglas, 2- or 4-ply rag board, or folder stock) to protect the item from damage caused by unnecessary bending and flexing. Use a stable appropriately sized book cart with horizontal shelves to transfer materials between storage and research areas. Provide book cradles in research areas that allow photograph albums to be viewed safely. Cradles permit a tightly bound book to be opened enough to be read but not so far that it is damaged. Felt-covered tablets filled with sand can be used to hold pages open as long as they do not touch the surface of photographic materials.

Avoid projecting a color slide longer than ten seconds because the intense projector light causes color dye shift and fading. Slides made for frequent projector use should be on Ektachrome® film, which is less prone to color fading under intense projection light. However, Ektachrome® is more prone to fading in dark storage than Kodachrome® slides. Thus Kodachrome® is the preferred slide material if it is not subjected to frequent projection. Recent research suggests that Fujichrome® is a good compromise for frequently used slides (Wilhelm, 1990).

Train staff to arrange, describe, and rehouse newly acquired materials with care. Instruct them in the proper method for handling films, glass plates, and prints, as well as brittle, broken, or flaking photographs of all types. Provide adequate storage enclosures and other necessary supplies during housing and cataloging so that materials will be housed properly. Evaluate training procedures on a regular basis and revise them as needed.

References


**Acknowledgements**

This project was made possible in part by the International Federation of Library Associations and Institutions (IFLA) and the Council on Library Resources. The author is particularly indebted to all those who reviewed and commented on draft versions of this document, including Constance McCabe, Debbie Bess Norris, and Mary Lynn Risteachler. Special thanks in particular go to Sarah Wagner (Technical Editor), Carrie Beyer (Production Manager), and Merily Smith (Managing Editor). In addition, the author would like to thank the Library of Congress, the National Archives and Records Administration, and the University of Delaware.

Mark Rosen
Robert Vosper Fellow
February 1992

[Return to the Preservation Directory Home Page.](http://www.loc.gov/preservation/directory/homepage.html)

[Go to the Library of Congress Home Page.](http://www.loc.gov)

Comments: lcweb@loc.gov (05/12/99)
Care, Handling, and Storage of Photographs

BIBLIOGRAPHY

(see also)

INFORMATION ISABLIET
STANDARDS
SUPPLIES

Originally published by:

IFLA Core Programme Preservation and Conservation
International Federation of Library Associations and Institutions

Adelstein, Peter Z. History and Properties of Film Supports.

Adelstein, Peter Z., Reilly, James M., Nishimura, Douglas W. and Erland, C.


Canadian Conservation Institute. Notes. There are eight notes that pertain to photograph care:

#205 Using a Camera to Measure Light Levels.
#158 Display and Storage of Museum Objects Containing Cellulose Nitrate.
#162 Care of Enlarged Photographic Images.
#163 Care of Black and White Photographic Glass Plate Negatives.
#164 Care of Black and White Photographic Negatives and Film.
#165 Care of Photographs Materials.
#166 Processing Contemporary Black and White Photographs Films and Paper.
(Available from the Canadian Conservation Institute, 1030 Innes Rd., Ottawa, Canada K1A (1M0).


Clapp, Anne F. Curatorial Care of Works of Art on Paper.


Eastman Kodak Company. The Book of Film Care.

Gillet, Martine; Garnier, Chantal; and Fieder, Françoise. Influence de l'Environnement sur la Conservation des Documents Modernes. In Les Documents Graphiques et Photographiques:


Romer, Grant B. Can We Afford to Exhibit Our Valued Photographs? Picturescope 32: 126-127 (1987).


Church Archives: Conservation

Bill Summey

All the efforts involved in establishing a church archives can be meaningless if all our historical materials will be unusable in 25 years. Most of the items in our archives have "permanent" value, so attention must be given to conserving these valuable materials.

Most church archives will not be blessed with having a trained archivist or conservationist to operate the archives. Many sophisticated techniques used in the restoration of materials cannot and should not be attempted by church archivists. There are measures and actions, though, that can be taken to lengthen the life span of church archives collections.

Nature of Material
The material nature of the archival record is diverse. Paper is the most common material found in archival collections. Leather, cloth, film-based material, photographic image, and tape recordings can also be found in archives. A majority of our historical records are maintained on highly acidic paper. It has been determined that acidity is one of the primary causes of paper deterioration. Most of the paper produced today has a life expectancy of less than 50 years. The rate of deterioration is dependent upon several external factors, such as environment, storage conditions and handling procedures.

Environment
In general, the temperature of the archives storage area should be maintained between 60° and 70° with a variation of no more than 5°F. Fluctuations in temperature cause paper to expand or contract as the temperature increases or decreases and causes paper to weaken and break. It is best to store historical materials in an area that has constant temperature control. Avoid areas that only have heating and cooling on weekends. Attics are awful locations for the storage of valuable materials.

Relative humidity should be maintained between 45% and 55% with a variance of no more than 10%. Humidity fluctuations combined with temperature fluctuations can weaken paper. An additional result may be the growth of mold which stains, softens and crumbles paper. Basement corners can have high levels of humidity and should be avoided as storage sites.

The most effective way to maintain a constant environment is through air conditioning. It can serve four purposes, if manufactured to do so to: (a) ventilate, to filter the air and to control temperature and humidity. Air conditioning can be the most important factor in the preservation of collections.

Paper is adversely affected by both natural and artificial light. Ultraviolet rays emitted by sunlight or fluorescent lights can damage material and cause light sensitive items such as
photographs and blueprints to fade. Keep archival material away from windows or at least have windows shaded. Use caution in displaying original material for extended periods of time under fluorescent lights. Incandescent bulbs can also be harmful due to the heat emitted from these lights.

Insects, rodents and other pests feed on substances found in collections. Insects generally prefer dark, warm, and damp areas and usually will be active at night when people are not present. The damage they cause is irreversible. Rodents can nibble away at collection items or eat them in their entirety; rodents like to use shredded paper as a nesting material. Good housekeeping methods and monitoring the area for signs of vermin are needed.

The storage area for the archives ought to provide security with limited access. The curious should not be allowed to rummage through the church’s historical records.

People abuse is the most constant threat to archival collections. Records, particularly brittle and fragile materials, need to be handled with care by church staff and researchers. Smoking, drinking, and eating should not be allowed near the records.

Church archivists need to be aware that disasters can destroy the recorded history of a church in a matter of minutes. Disasters can result from fires, flooding, storms, or broken steam pipes and can destroy or damage a few items or entire collections. Some precautions, such as an adequate sprinkler system, not storing materials under water pipes and not storing materials on the floor or in a basement can sometimes save valuable records from destruction. Having a secure microfilm copy of the church’s records is one way to safeguard against such catastrophes. The Southern Baptist Historical Library and Archives in Nashville, TN, and several Baptist state convention historical organizations make microfilm church records, either at a low cost or free of charge.

Storage of Material
The type of storage area needed depends on the size and scope of the archival holdings. Some churches may be able to store its material in a large safe or a series of filing cabinets. Larger church archives will need shelving. Metal cabinets and shelves are recommended for storage of historical records. Wood cabinets and shelving, if used, need to be sealed with a varnish. Raw wooden shelves should never be used.

Acid-free folders and boxes are available for the storage of church archives material. Storage sleeves for photographs, slides and negatives can be purchased from archival supply companies. Most archival quality supplies are not available in office supply stores. A few companies that sell archival storage materials are listed at the end of this article.

Preservation Action
Controlling the environment and storing materials properly are fundamental to caring for collections. Church archivists can take a few more direct actions to preserve their material.

Church archivists should attempt to integrate conservation practices into each phase of archival work. For example, when sorting through a collection the processor can carefully flatten folded documents, clean items, and remove metal paper clips, pins, pressed flowers and rubber bands. Brass clips and fasteners do not have to be removed. Plastic clips or stainless steel clips can be used as fasteners. Records can be cleaned with a soft-bristled brush. These actions not only help preserve the material but enhance the appearance of the collection.

Bound volumes contain much of our historical information. Similar sized volumes can be stored upright on shelves or in folders in boxes. Larger volumes usually are best stored flat on the shelf. Volumes stored within folders should be filed spine down within the folder. Volumes that have loose or missing covers or that
are otherwise not intact may be handled in several ways. All volumes with broken or weak binding should be tied, using unbleached cotton or linen tape. Additional protection may be provided by enclosing the volume in a polyester book jacket. Special archival quality boxes can be purchased to store fragile volumes. Scrapbooks and albums need to be stored flat in boxes.

Other preservation tasks such as cleaning and oiling of leather bindings and the encapsulation of fragile documents may be undertaken by church archivists after training or reading on the subject. Deadening, mending of items and fumigation are complex conservation methods and should not be attempted without specific training.

Proceed with Caution
A word of caution to church archivists attempting to mend records. Never use pressure sensitive tape to mend anything of historical value. Tape can cause permanent damage to the material. One of the guiding principles of conservation is that no procedure or treatment should be undertaken that cannot be undone if necessary. It is important to realize the fact that in some instances it may be best to do nothing at all to restore an item.

It is the responsibility of the church to maintain its records in a safe and secure environment. Materials ought to be stored in archival quality containers. These two actions are fundamental to the preservation of materials. Additional tasks of flattening, cleaning, and mending can add further to the life of our church's historical records.

Suggested Reading
The best book available to assist church archivists in the area of conservation is Archival and Manuscript Conservation by Mary Lynn Rinzenthaler. It is available from the Society of American Archivists, 330 S. Wells, Suite 810, Chicago, IL 60606.

Archival Suppliers
Several companies provide archival quality storage containers. Rinzenthaler's book lists several suppliers with their addresses. These companies are listed below.
Gaylord Bros., Inc.
Box 4901
Syracuse, New York 13221

Hollinger Corporation
P. O. Box 5183
3816 South Four Mile Run Drive
Arlington, Virginia 22206

University Products
P. O. Box 101
South Canal St.
Holyoke, Massachusetts 01011

© 1996, Southern Baptist Biblical Library & Archives
Comments and Questions
IOWA STATE UNIVERSITY

OF SCIENCE AND TECHNOLOGY

Special Collections Department
419 Parks Library
Iowa State University
Ames, IA 50011-1440
(515) 294-8773
Email: spec@lib.iastate.edu
Website: http://lib.iastate.edu/spec/index.html

This is the fourth of a series of technical leaflets that will be distributed by the ISU Special Collections Department. The Special Collections Department was founded in 1969, and collects papers, records, manuscripts and other items that relate to Iowa State University, agriculture, and rural life; past science and technology. The history of Iowa, its agriculture, farm family and consumer sciences, and Iowa's part of Iowa State's history from the very beginning. The purpose of Leaflet #4 is to provide information for potential family and consumer sciences donors on the types of materials archival repositories are interested in collecting.

THINGS TO CONSIDER WHEN DONATING ARCHIVAL MATERIALS

Society of American Archivists: A Guide

Why an Archive?: An archive can provide environmentally-secure storage, safeguard records during their handling and use, and can provide research access. By placing papers and records in an archives, you are preserving them for the future.

Access: The archives should have policies and procedures in place for the use of records and for their care. If you have any special concerns, they should be discussed with the repository prior to donation.

Copyright: Copyright assignment is a complex issue and should be discussed with the repository prior to donation.

Deed of Gift: Most archives will expect that legal title will be transferred when the collection is donated. Not owning material severely restricts an archive's ability to care for records properly.

SUGGESTIONS FOR LOCATING AN APPROPRIATE REPOSITORY

Selecting the appropriate repository can often take time and research. Your papers and records should go to an institution that collects materials relating to you or the history of family and consumer sciences. It is appropriate to explore possible collection sites that reflect your professional background or geographical area first. Following is a suggested sequence of steps:

- Check with your university alma mater

  University Archives often collect the papers and memorabilia of alumni, and your papers may very well fit in with the institution's collecting policy.

- Check with state/regional repositories

  A state archives or historical society may be interested in documenting your area, region, or state history.

- Check with a repository specializing in the history of family and consumer sciences

Technical Leaflet #5 (December 2001) will provide a listing detailing repositories that focus on family and consumer sciences.

GENERAL GUIDELINES FOR DONATING ARCHIVAL MATERIALS

Archives are usually interested in collecting the following types of material from individuals and organizations:

General Guidelines for Discarding

Archives are charged with maintaining and providing access to the materials collected in perpetuity. Given the large amounts of records being created daily, it is necessary for archivists to focus on only collecting those materials of the highest value. Please check with an archivist before discarding anything, but some general guidelines include the following kinds of materials:

- Applications for Employment
- Bank Statements
- Budget Files (excluding annual reports)
- Cancelled Checks
- Contracts/Leases
- General Conference Records
- Personal Files
- General Financial Records (past 7 years, should be kept for auditing purposes)
- Attendance Lists
- Grant Administration Files

GENERAL STORAGE GUIDELINES FOR PERSONAL AND PROFESSIONAL PAPERS

Documents, manuscripts, maps, posters, ephemera, newspapers, and postcards are all made of paper. Paper will deteriorate without appropriate protection. It is important for personal and professional papers to be stored in a cool, dark place with stable temperature and relative humidity. It is especially important that they not be stored in an attic, basement, or garage where dust and drastic changes in temperature and humidity accelerate the deterioration of the paper. Using storage folders and boxes to help protect pages from the environment will assist in their long-term preservation.

Providing a Protective Environment

- Ideal relative humidity: approximately 45-55%
- Ideal temperature: approximately 60-65 degrees Fahrenheit
- Consistent relative humidity and temperature is extremely important
- Protect materials from dust and other pollutants
- Protect materials from light
- Protect from pests and mold

Select the Appropriate Storage Materials

- Always use archival-quality storage materials (see list of suppliers in this leaflet), including acid-free paper, folders, and boxes
- Use Mylar, a stable polyester, or polypropylene or polyethylene for photographs and specific documents
- Always use reproductions for display

Preparing Materials for Storage
• Store documents upright (with support) in acid-free folders in acid-free boxes
• Match document size with its container
• Do not overstuff folders or boxes
• Label folders and boxes as to contents and dates—this alleviates wear and tear when looking for an item
• Utilize appropriate storage containers for oversized materials (oversized storage boxes) or ephemera such as postcards or magazines (individual polyester enclosures)

Do Not:

• Do not laminate any item you wish to preserve for the long-term—lamination can cause long-term damage
• Do not use tape or glue on your materials
• Do not display any document or photograph of value—sunlight and light will cause irreparable damage
• Do not use magnetic "sticky" albums
• Do not use any item made of polyvinyl chloride (PVC)
• Do not consider digitizing your photographs as a long-term preservation option. It is unclear how long digital images will last, due to rapid changes in technology and incompatibility of storage formats (e.g., CD-ROMs)

Preparing Your Personal/Professional Papers for Donation and/or Storage

• Remove all fasteners and extraneous materials—paper clips, rubber bands, staples
• Do not remove fasteners if doing so will cause additional damage
• Plastic documents (remove from envelopes if necessary)
• Use metal or steel fasteners or clips to attach related documents or an envelope to a letter
• Separate newspaper clippings
• Identify documents and photographs if necessary with a soft #2 pencil on the back and along the margins. Note authors and date, if known.
• Separate fragile or torn documents—seal in protective enclosures and store in folders

Sources for Archival Supplies:

Conservation Resources Gaylord Brothers
800-3-Forbes Place, Box 4901 Springfield, VA 22151
1-800-634-6932

The Highsmith Company, Inc.
333 West 25th Highway 106 Hollinger Corporation
Fort Atkinson, WI 53538-0800 P.O. Box 6185
1-800-333-2110

Light Impressions
439 Monroe Avenue
Rochester, NY 14603-0940
1-800-628-5216

TALAS
215 West 35th Street
New York, NY 10001-1996
1-212-796-3744

For additional information, please contact:
Tanya Zewisch-Belcher, Assistant Professor
Head, Special Collections Department
408 Parks Library
Iowa State—University
Ames, IA 50011-2140
Telephone: (515) 294-6648
Fax: (515) 294-5525
E-mail: texarch@iastate.edu

Iowa State University Library, Ames, IA 50011
Revised: 3 October 2001.
TIPS ON THE SELECTION AND CARE OF SCRAPBOOKS

Since the nineteenth century, people have used scrapbooks to record the intimate details of their daily lives. Like miniature museums, these scrapbooks hold the bits and pieces they have saved to document the most touchingly personal reflections.

The enemy within

Despite their charm, scrapbooks usually serve memory poorly. Most come from art supply, stationery, or photography stores, are made of wooden, cardboard, or plastic binders, and harbor harmful chemicals in their adhesives, acidic mounts, and plastic envelopes—chemicals that combine with their hosts to attack the scrapbooks and destroy their contents. To compound the problem, the nature of scrapbooks shortens their life. Pages bend and abrade the documents they hold by being turned often, and the chemical reactions among the various kinds of paper that lie side by side—photographs, newsprint, and so forth—pose serious threats as well. Few archivists recommend the use of scrapbooks for the storage of valuable documents. Most will place the records in folders, store them in properly designed document and photograph cases, and buffer them with tissue or envelopes if necessary. Thus, unless they have value as artifacts, most archivists will discard scrapbooks and place their contents into archival containers to prolong their life.

Mounting defenses

Despite the drawbacks, many of you are attached to your scrapbook and will want to keep its familiar look and feel. To help you, we have some simple and inexpensive solutions for problems with old scrapbooks, some advice on the purchase of new ones, and a word on the environment you should store them in.

The old scrapbook

Complaint: The acid in the black or once-white paper of your scrapbook has broken down the paper fibers, and your pages are now brittle.

Remedy: Interleave alkaline tissue between the pages and put the scrapbook in a buffered box made to fit. The alkaline buffering in the tissue and box will slow further deterioration and the box will protect your scrapbook from rough handling and keep out light, dust, and dirt.

Complaint: Some newspaper clippings and photographs in your scrapbook are firmly attached to the mounting sheets, but other documents are falling away from the pages.

Remedy: Do nothing to documents that are firmly attached to the mounting sheets, but use archival corner holders to reattach those that are falling away. You can use inert polyester (Mylar D) or alkaline paper to construct the corners yourself or you can purchase ready-made archival-quality corners from a vendor who specializes in archival products.

Complaint: Brown stains have formed around the tape and glue you have used to attach items to the pages in your scrapbook.

Remedy: DO NOT use scotch tape or glue to attach any item to the mounting sheets. The brown stains you see are caused by highly acidic adhesives, which will eventually destroy the paper they touch.

Complaint: The newsprint saved in your scrapbook is disintegrating.

Remedy: DON'T store newsprint as is because the groundwood pulp paper used to make it will eventually destroy your newsprint and all it touches. DO preserve information on newsprint by copying it onto alkaline paper and discarding the original, or, if you must use the original, have it deacidified by a professional or place it between an additional lining of buffered tissue to retard the acid breakdown.

The new scrapbook

DO choose your supplies carefully. You can create an acceptable scrapbook by selecting components from the "Archival Quality" line available from vendors who specialize in archival materials. Construct your scrapbook by using a mylar cover in combination with alkaline or non-buffered pages; select pages with slits or purchase corners of polyester or alkaline paper to hold your documents in place. DON'T use the standard commercially available scrapbooks, especially those with plastic pages and adhesive backings—they are unacceptable for long-term storage.
The storage environment

Unlike documents that are stored within envelopes, folders, and boxes, scrapbooks have little protection. The environment in which they are stored, therefore, is critical to their longevity. A temperature of 70 degrees and a humidity level of 50 percent is ideal, but failing that, keep the temperature and humidity level as constant as possible.

Used with permission from the South Carolina Department of Archives and History.

Return to Colorado State Archives

Comments to archives@state.co.us

Last modified September 13, 2000
Resources and Bibliographies

Basic Environmental Concerns:

- http://www.nedcc.org/locost.htm (low cost environmental improvements)
- http://icweb.loc.gov/preserv/deterioratebrochure.html (paper preservation)
- http://www.nedcc.org/priority.htm (preservation planning)


Basic Records Handling:

- http://www.nara.gov/arch/techinfo/preserva/maintena/hn1.html (excellent information; the best single online source about a range of records formats)
- http://www.archives.state.ut.us/preserv/bascaofp.htm (sound information)
- http://www.nedcc.org/p101cs/p101wel.htm (online preservation course)
- http://www.nedcc.org/p101cs/gandh.htm (useful for records users too)
- http://www.history.pusa.org/synods/records/preservation.html (directed to churches but broadly applicable)

Mary Lynn Ritzenthaler, Preservation of Archival Records: Holdings Maintenance at the National Archives, Technical Information Paper Number 6, Published by the National Archives and Records Administration, Washington, DC, 1990: 23 pages.

Reformatting Services, Supplies:

http://www.socinet.net/presvtn/leaf/reformat.htm (service providers)
http://palimpsest.stanford.edu/byorg/georgia/reform.html
http://lcweb.loc.gov/preserv/care/photocpy.html (preservation photocopying)

Microfilming:

http://www.archives.state.ut.us/preserv/guide/processing.htm
http://www.kshs.org/archives/microfim.htm


Digital:

http://www.nedcc.org/plam3/leaf54.htm (good introduction to issues)
http://www.rlg.org/preserv/joint/imaging.html (digital imaging standards)
http://sunsite.berkeley.edu/Imaging/Databases/Scanning/ (excellent introduction)
http://etext.lib.virginia.edu/helpsheets/scanimage.html (tutorial)
http://sunsite.berkeley.edu/Info/ (resources on scanning)
http://www.lita.org/ital/1603_klemperer.htm (resources on scanning)
http://www.nedcc.org/plam3/conbib.htm (further readings)

Disaster Plan:

http://palimpsest.stanford.edu/byorg/georgia/disast.html
http://www.nedcc.org/plam3/leaf33.htm (includes salvage equipment list)
http://www.nedcc.org/plam3/leaf34.htm (good worksheet for preparedness)
http://www.nedcc.org/plam3/leaf37.htm (salvage)
http://palimpsest.stanford.edu/socinet/displan.htm
http://palimpsest.stanford.edu/socinet/disproc.htm
http://palimpsest.stanford.edu/socinet/wetbooks.htm (book salvage)
http://palimpsest.stanford.edu/bytopic/disasters/primer/ (has good links to specific information)
http://www.colostate.edu/floodrecovery/ (case study in recovery)

Arrangement and description:

http://www.schistory.org/getty/ (particularly the tutorial)
http://www.uidaho.edu/special-collections/papers/a&d.htm (enjoyable reading but not concise)
http://www.sbhla.org/art_arrange.htm (church records are the example, this gives a quick overview)
http://clerk.ci.seattle.wa.us/~archives/outline.htm (an example of a finding aid, the outcome of an arrangement and description project)
http://www.library.yale.edu/beinecke/manuscript/process/lconv.htm (answers the question of 'what's the footage?')
http://www.system.missouri.edu/wihmc/invent/wpa.htm (an example of a records description)


Use, policies, reading rooms, etc.

http://www.sdhistory.org/arc_info.htm (a state historical society)
http://www.iun.edu/~lib/creapers.htm (reading room policy)
http://gullib.lausun.georgetown.edu/dept/speccoll/spcreg.htm (reading room policy)

Files Management:

http://www.archives.state.ut.us/recmanag/filetech.htm (very clear, practical guide)
http://www.washington.edu/admin/recmgt/filesmgt.html (good suggestions although examples are drawn from an academic institution)
http://www.ai.org/icpr/webfile/publicat/arrangements.html (setting up a file arrangement)

Paper surface cleaning:

Collection development policy:

http://www.shsw.wisc.edu/archives/wrab/wapl_manual.html (for a public library setting but universally applicable)
http://www.shsw.wisc.edu/archives/wrab/wclib_manual.html (for a historical society)

Records inventory:

http://www.nagara.org/rmbulletins/bulletin_3.htm (inventorying basics for local records programs)
http://www.state.sc.us/sccah/117_inv.htm (‘how to’ of a records survey)
http://www.nagara.org/rmbulletins/bulletin_3.htm
http://www.lva.lib.va.us/state/records/manuals/00m-cb4.htm

Photographs:

http://www.nedcc.org/phocar.htm (care of photos)
http://lcweb.loc.gov/preserv/care/photo.html (very basic)
http://www.nedcc.org/nitrate.htm (identification)
http://www.nedcc.org/plam5/leaf511.htm (storage)
http://www.nara.gov/arch/faq/aboutph.html (geared to answer private individuals’ questions, a reliable resource)


Additional Topics

http://www.library.uiuc.edu/preserve/flip5.html (book preservation housing)
http://www.libbinders.org/capable/industry.html (Library Binding Institute to standards)
http://www.dartmouth.edu/-/preserve/repair/repairindex.htm (book repair tutorial)
http://www.wheaton.edu/bgc/archives/caw.html (church archives, a resource list)
http://palimpsest.stanford.edu/sojnet/consuppl.htm (supplies, suppliers)
ORGANIZATIONS TO KNOW ABOUT:

Organizations' web sites that provide accurate information:

Northeast Document Conservation Center http://www.nedcc.org
SOLINET http://www.solinet.net/presytu/preshome.htm
CoOL http://palimpsest.stanford.edu/
Library of Congress http://lcweb.loc.gov/preserv/carele.html
National Archives http://www.nara.gov/arch
ANSI http://www.ansi.org/
COSHRC http://www.coshrc.org/arc/index.htm

Associations that provide professional development opportunities, continuing education, and information resources:

New Hampshire City and Town Clerks' Association
http://www.nhmunicipal.org/NH%20City%20&%20Town%20Clerks%20Association/NHCTC_Home.html

New Hampshire Library Association
http://www.state.nh.us/nhla/

New Hampshire Municipal Association
http://nhmuni.home.virtualtownhall.net/nhmuni_home/

New Hampshire Archives Group
[no site at this time]

New England Archivists
http://www.lib.umass.edu/newengarch/

New England Association of City and Town Clerks
http://www.neacto.org/allaboutus.htm

New England Museum Association
http://www.nemanet.org/about.html

National Association of Government Archives and Records Administrators (NAGARA)
www.nagara.org/
The American Association for State and Local History
www.aaslh.org/

Society of American Archivists
http://www.archivists.org/

Association of Information and Image Management (formerly National Micrographics Association)
http://www.alim.org/

Association of Records Managers and Administrators, Inc. (ARMA International)
www.arma.org/

International Institute of Municipal Clerks (IIMC)
http://www.iimc.com/index.html
NHLREP Workshop
Archival Supplies Resource List

University Products
P.O. Box 101, South Canal Street
Holyoke, MA 01041
1-800-628-1912
http://www.universityproducts.com/

Hollinger Corporation
3810 South Four Mile Run Drive
P.O. Box 6185
Arlington, VA 22206
1-703-671-6600
www.hollingercorp.com

Gaylord Brothers
Box 4901
Syracuse, NY 13221-4901
1-800-448-6160
http://www.gaylord.com/

Light Impressions
P.O. Box 940, 439 Monroe Avenue
Rochester, NY 14603-0940
1-800-828-6216
http://www.lightimpressionsdirect.com/servlet/OnlineShopping

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

TALAS
213 West 35th Street
New York, NY 10001-1996
1-212-736-7744
http://www.talas-nyc.com

This list is not intended as a recommendation of specific vendors