Preservation of Photographs: Handling, Storage, Display, Conservation & Restoration

Paul Messier, 2005

The article is a slight revision of the chapter “Preservation, Restoration and Display” from the book “A Portrait of Baseball Photography,” Fogel, Oser and Yee, 2005.

Question regarding the preservation of photographs date back to the very birth of the medium in the early 19th century. The early inventors were initially plagued by the inability to fix images recorded by a camera and suffered intense frustration as their experiments were destroyed upon exposure to light. While these obstacles were eventually resolved, the photographic literature has remained filled with research and commentary on other permanence issues such as the yellowing of highlights and the importance of clearing residual fix.

Today the physical and chemical properties of photographs are better understood and there are numerous tools and resources available to collectors to insure that the photographs in their possession remain in good condition. Understanding what a photograph is, in terms of its material make up, is the key to promoting preservation. Photographs are combinations of organic material (such as paper, gelatin and albumen) and inorganic material (most notably silver). For example, an albumen print from the 1870’s will have an image formed by silver particles bound to a paper base by a coating of hen's egg white (albumen) just as a typical “black and white” photograph from the 1950’s will have a silver-based image to a paper base by gelatin. Reduced to this level of analysis, it is common sense that photographs can be fairly fragile given improper storage, handling and display conditions. Everyone knows silver can tarnish, paper can develop creases, tears and folds, and that gelatin can become discolored, brittle, and provide an excellent source of nutrition for mold, insects and other pests. The job of the collector is to understand the threats and to respond through some basic preservation measures.

The sheer volume of photographs produced over time and their ubiquitous presence in our culture can lead to some poor handling habits when it comes to vintage, collectable, prints. For example, as photographic prints age and deteriorate, mounts, paper bases and binders can become increasingly brittle. As a print becomes more brittle there is a greater tendency to form creases, tears and to develop cracks in gelatin and albumen binders. Bending and flexing a vintage print should be avoided as much as possible. Whenever practical, a secondary support, like a good quality piece of mat board or heavyweight polyester sleeve, should be placed behind a print during handling so stresses are more equally distributed across the plane of a print. Finger oils and perspiration not only can leave marks on the surface of a print but can, over time, cause severe staining. Photographs should be handled carefully at the edges only. When this sort of minimal handling is not possible, collectors should wear cotton gloves.

An albumen print cross section viewed with a scanning electron microscope at 1,000 X magnification The albumen coating, binding the silver-based image, and the paper base are clearly visible.

A gelatin silver print by Manuel Alvarez Bravo. The lost corner and the cracks in the gelatin across the upper right corner are the results of poor handling.
For storage, multiple photographic prints can be stacked flat in boxes. Vertical storage, in file cabinets or hanging storage, should be avoided as photographs have an increased tendency to warp and bend. Whenever possible each print should be stored individually in its own sleeve or mat. Sleeves made of clear polyester (often marketed under the DuPont trade name Mylar® D) or polypropylene (used for certain types of top-loaders) are good choices since the materials are stable and inert. Mats should be made of four ply paperboard. Once matted the face of the photograph should be covered with a polyester or paper overleaf to help protect against abrasions. Any enclosure, including sleeves, mats, overleafs, and boxes, should meet or exceed the benchmarks established by the Photographic Activity Test (P.A.T.). An International Standards Organization (ISO) standard, the P.A.T. is an objective method for determining the acceptability of enclosures used in contact with photographic images. Most reputable “archival” vendors will have information on which of their products pass the P.A.T. A common mistake among beginning collectors is using inexpensive materials to house photographs. This mistake can have disastrous results as many materials found on the market today for the housing photographs, like some “magnetic” albums and plastic enclosures can actually cause irreversible damage to a photograph in a matter of years. The minimal extra money and time spent finding a reputable vendor of archival materials, asking questions and carefully selecting appropriate materials can be a crucial investment.

Among the variables that impact the stability of photographs, temperature and relative humidity are the most significant. Photographs should be stored in dry, cool locations. Storage in hot attics and humid basements should be avoided at all costs. Warm storage areas accelerate the natural aging processes of photographs, promoting embrittlement, and staining. Likewise humidity also causes embrittlement and staining but is also known to accelerate the fading of silver-based images and discoloration of albumen and gelatin binders. High relative humidity can also cause mold to form on the surface of photographs and can attract insects and other pest that find the cellulose and protein components of a photograph to be an appealing food source. To the extent possible the temperature and relative humidity in a storage area should be stable from day to day and throughout the year. In practice, maintaining a stable environment can be very challenging but storage in sleeves and boxes helps buffer large swings in humidity. For the storage of black and white prints the ISO specifies conditions that do not exceed 50% relative humidity (RH) and temperature ranges that do not exceed 45OF. Geared toward large institutional collections, adhering to these parameters may be
impractical for most individual collectors. Nevertheless the point is clear: photograph collections benefit from storage in cool dry conditions.

Collectors naturally want to display their most significant acquisitions. When it comes to photographs, however, long-term display always carries a price. Exposure to light can cause a progressive yellowing and sometimes cracking of albumen and gelatin binders. For the display of photographs, many museums will lower light levels close to the minimal threshold of human color perception. While such low light levels may be unacceptable for most individual collectors, controlling light, by reducing the duration and intensity of exposure, should be a top priority. Simple steps, like turning off lights and drawing drapes during the day when a room is unoccupied, can have a huge payback in terms of increased image stability. Use of ultraviolet filters on windows or for framing can have a significant impact on reducing damage due to light exposure. Like museums, private collectors should also consider rotating displays so no single photograph remains on display on a permanent basis.

Over time most serious collectors will assemble a “team” of experts upon which they can rely for guidance. A conservator should be part of this team. Conservators specializing in photographic materials are trained to provide in-depth advice when it comes to handling, storage and display issues. Conservators are also able to identify active, ongoing deterioration problems and develop treatments to stabilize the condition of photographs. In many cases the appearance of a photograph can be degraded by problems, such as staining, surface dirt, and losses to an edges or corner. In such instances a conservator can propose a treatment to safely improve the appearance of a photograph without undermining its long-term stability. Collectors can contact The American Institute for the Conservation of Historic and Artistic Works (AIC) for a publicly accessible database listing conservators sorted by their geographical location and area of expertise. Over time, working with a conservator can help collectors build a more sophisticated level of discernment identifying which condition problems can be successfully treated and which can not. This type of knowledge can be a significant edge in the marketplace where knowing the actual condition of a print and its prospects for long-term stability can be the difference between a good investment and an expensive lesson in photograph conservation.

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Paul Messier's Boston-based private practice specializes in the conservation treatment and historical analysis of photographs. For more information visit http://paulmessier.com.

Resources:

- AIC's Photographic Materials Group, Caring for your Photographs
- Library of Congress' Caring for your Photographic Collection
- The National Archives FAQ's

http://paulmessier.com/pm/pdf/papers/papers_html/preservation.html