The Care and Preservation Of

Photographic Prints

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Introduction

Photographic prints can be maintained for years of use and enjoyment provided that some basic care and attention is given to their preservation. The conservation staff at The Henry Ford has compiled the information in this fact sheet to help individuals care for their objects and collections. The first step in the care of photographic collections is to understand and minimize or eliminate conditions that can cause damage. The second step is to follow basic guidelines for care, handling, and cleaning.

Photographic print processes within the United States beginnings in the 1840s included daguerreotypes, uncoated papers, collodion emulsions, albumen emulsions and more contemporary gelatin emulsions, color processes, and permanent photographs. Even in this digital age, many of these older processes are still being used by amateurs today.

The variety of materials used to make photographic prints is extensive, but all photographs have the same basic structure consisting of a support layer beneath an emulsion layer. Possible supports that are used include paper, glass, film, metal, fabric, wood, plastic, stone, and china. Certain photographs, such as daguerreotypes, ambrotypes, and tintypes were kept in decorative and protective case packages made of wood, shellac and sawdust or cardboard covered with leather and embossed paper.

Please note - this fact sheet will present a brief overview of the care of photographic prints, stressing good storage and proper handling as the best methods of preservation. It does not address the disastrous damage caused by fire, water, pests, and other agents of deterioration. Please contact a conservator if you need specialist assistance with conservation of these materials.

Types of Damage to Photographic Prints

Poor handling and inappropriate storage are the major causes of damage to photographic prints and can result in yellowed or faded images, scratches, tears, and permanent finger marks. Inappropriate storage refers to either an area that is not properly environmentally controlled, or storage with inappropriate stresses placed on the object physically. Photographs are extremely sensitive to the chemicals used to process them and can be

damaged by excessive heat and cold, intense light and humidity, pollutants in the air, or the adhesives used to mount the image.

Physical force - Physical damage to photographic prints is quite common as materials are susceptible to tearing, creasing, and breakage. Handling of original and fragile materials should be kept to a minimum.

Light - Excessive light causes dye fading in the emulsion layer of photographs. Daylight and ultraviolet light cause severe and permanent damage to photographic materials in the form of fading and embrittlement.

Incorrect humidity - Relative humidity (RH) levels above 65% cause mold growth. Levels below 25% RH cause brittleness and curling of the print. Mold fungus feeds on dead organic matter, including leather, wood, paper, and gelatin. Fingerprints on photographic prints leave skin oil that nurture mold spores. Mold growth causes damage over time that is permanent and destructive to the gelatin.

Pollutants - In cities and areas of high pollution, oxidation rates increase, causing image silver deterioration of early photographic prints.

Pests - Insects and rodents are attracted to ingredients in photographic materials. Good housekeeping practices include no food, drink, or smoking in storage areas. Fumigants used for pest infestations can affect the image layers of photographic prints. It is best to avoid chemicals and use non-chemical methods to control infestation.

Storage of Photographic Prints

As with most materials, proper storage is the first line of defense against damage of photographic prints. General storage and work areas for photographic prints is ideal at 68°F. Maintain an even, low humidity where photographs are kept, acceptable between 30-50% relative humidity (RH). The optimal level is between 30-35% RH. Prevent rapid fluctuations in either RH (±3%) or temperature (±2°F), as drastic changes in temperature will cause color changes and fading of the image. RH levels below 25% will result in the film and paper becoming brittle, as well as curling or shrinking. High humidity causes photographic materials to stick together and to plastic storage materials. In most homes, an even environment is difficult to ensure. Basements and attics tend to be damp in the summer and therefore should not be used for the storage of collection artifacts. Humidity sensors are available through suppliers listed at the end of this document for those who wish to check conditions near their collections. Do not allow dust to accumulate on stored objects, as it

can hold moisture and cause scratches on the emulsion layer of photographs.

Dark storage is preferred for color photographic materials that are not on display or in use for research purposes. Cold storage is often used for materials vulnerable to rapid deterioration (original prints, negatives, and transparencies, but not images on glass or metal) and after they have been reformatted for access and duplication. These materials can be kept in archival folders in acid-free boxes and double freezer weight zippered bags. Ideal cold storage temperatures are within 35-40°F and relative humidity of 30-50%. If retrieving these materials for any urgent reason, allow the photographic prints to warm to room temperature in their enclosures first.

You can protect your collection by storing photographic prints interleaved with acid-free paper, enclosed within storage materials made of chemically stable plastic (polyethylene, polypropylene, and uncoated polyester) or high-quality paper enclosures. Use unbuffered, acid-free paper for color prints and nineteenth century photographs. Never use paperclips, rubber bands, tapes, or adhesives on photographs. Albums can be used to store photographic material if they are made of dye-free and acid-free archival materials. Historic photo albums were often made from non-archival materials, but they themselves are part of the object's history and treated as an artifact. A thin sheet of unbuffered paper between the pages will mitigate the high acidity of the album that causes damage to the photographs while not adding thickness that stresses the album's spine. Boxes, albums, and folders can be stored in noncorrosive furniture cabinets or drawers made of aluminum or steel. Wood cabinets and shelving should be avoided. Ensure materials do not slump, move about, or slide underneath one another.

Handling of Photographic Prints

Most photographic prints should not be handled with bare hands. Salts and oils from your skin can damage the emulsion layer. Handle your valuable collection with gloves. Nitrile gloves are preferable, as they protect the object but also prevent anything on the surface of the object from transferring to your skin. If the photographic print is mounted to a matboard, handle it by the mount. If the mount is original to the photograph and in a fragile state, use an acid-free, rigid board beneath the photograph to support it as it is moved.

When on display, photographic materials should be kept at light levels of 50-100 lux (5-10 footcandles). When displaying photographs, use LED bulbs instead of fluorescent when possible. Eliminate harmful ultraviolet light by using UV-filtered glass or Plexiglas on framed photographic materials. Inscriptions written on photographic prints are likely to fade while on display. If identifying information must be written on the photographic print and not the

storage material, use an HB pencil to write on the back, as close to the edge as possible. Display original images for no longer than 6-8 weeks at a time.

Cleaning & Care

Accumulated surface dirt can be removed with a soft brush or pressurized air from a compressed air can or air bulb. This is the most cleaning that can be done for many photographic materials without causing further damage. If the color printed surface is intact, damp cotton swabs can be lightly used for surface accretions.

Disaster Response

Historical paper materials are typically salvage priorities due to their fragility. When it is safe to perform salvage, the recovery of photographic prints includes removing them from harm's way, ideally color materials first. Air-dry wet photographs by hanging them with clips that do not cause indentations on a line or placing them on a clean surface. If time and space is a concern, placing wet photographs in a commercial or home freezer, then thawing and air-drying in a clean, dry space with good air flow and low humidity is best for recovery after a disaster. These measures are effective for paper photographs and images in cases. Photographs on metal, glass, ceramics, or leather should not be placed in a freezer.

For additional information on disaster recovery see:

https://www.nlm.nih.gov/hmd/preservation/videos.html

If an original photograph is beyond restoration to minimize the damage caused to it, copying may be a practical method to preserve the image. Copying an old and damaged photograph allows retouching to minimize or eliminate damage, removal of most scratches, and wipes away stains and yellowing, while the original photograph can be preserved in storage.

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SUPPLIERS

Framing, Storage Supplies, Light Sensors:

- Conservation Resources International L.L.C.
  http://www.conservationresources.com
- Light Impressions
  http://www.lightimpressionsdirect.com
- TALAS
  https://www.talasonline.com
- Light Impressions
  http://www.lightimpressionsdirect.com
- Hollinger Metal Edge
  https://www.hollingermetaledge.com

Nitrile and Cotton Gloves:

- Gaylord Archival
  https://www.gaylord.com
- Uline
  https://www.uline.com

Brushes:

- Arts/Crafts supply stores

Humidity Indicators:

- University Products
  https://www.universityproducts.com

To Find a Conservator:
The American Institute for Conservation of Historic & Artistic Works
https://www.culturalheritage.org/about-conservation/find-a-conservator