

Caring for your collections: Photographs

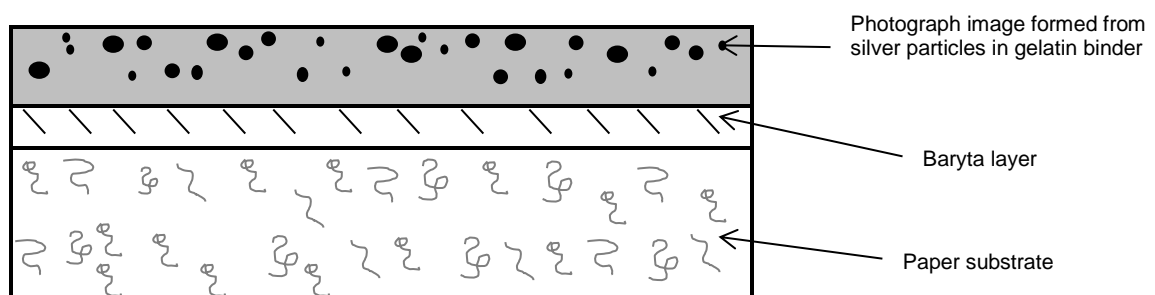
This guide aims to provide general information and advice for the care of photographs. For details on conservation of specific photograph processes please see the additional resources listed. With the advent of digital photography, digital file preservation is another important aspect of caring for photographs; however this is outside the scope of this guide.

Materials

Photographs generally have a layered structure consisting of a binder (or emulsion) layer containing the image forming substance on a support material such as paper or glass. Other layers may be present such as a baryta layer, coatings, hand colouring or mounting materials. As an example of the layered structure of a photograph see the schematic cross-section below. Variables in the layer structure may be present due to the photographer practices, availability of materials, or the technology of the time.

Photography has been characterised by a continual evolution of photograph processes. This has left a diverse legacy of photograph materials, including metals, glass, plastics, paper, gelatin, albumen, pigment, ink, dye, and even ceramic and leather among other things. For further information on identification of photograph materials and processes please see the additional resources listed. The Image Permanence Institute's *Graphic Atlas* is a good starting point (www.graphicsatlas.org/).

General layer structure of gelatin silver (black and white), fibre based print



Caring for your photographs

All materials used to create photographs are subject to some form of deterioration. The longevity of photographs is dependent upon the materials themselves, environmental conditions, storage, housing, and handling. With this in mind, focussing on the following levels of protection will help to preserve your collection.

Environmental Conditions and Storage

Maintenance of a stable storage environment is crucial to the longevity of photographs. The environmental factors that affect their preservation are relative humidity (RH), temperature (T); air quality; light; biological agents; and handling and housekeeping practices. These factors are often interrelated.

Temperature (T) and Relative Humidity (RH)

Extremes and fluctuations in T and RH can cause considerable damage to photographic material. High RH (above 60%) will encourage mould growth and insect activity. Gelatine emulsion can swell and stick to surrounding materials. High RH can contribute to chemical reactions such as the formation of silver “mirroring”. Very low RH (below 20%) can cause flaking of photographic emulsions and brittleness of paper supports and mounts. Dramatic fluctuations can cause structural damage such as warping of paper supports and cracking of binder layers.

There are various specific recommendations for T and RH storage conditions according to different photograph and negative materials. Bertrand Lavédrine’s book *Photographs of the Past, Process and Preservation* provides a very useful table of recommendations (2007, p. 283). Collecting institutions often work to these set points recommendations, but they may not be realistic for personal collections in the home. The general theory is that cooler storage temperatures will result in a longer lifespan for collection materials. Selecting a cool and stable environment with minimal T and RH fluctuations will be very beneficial for your photograph collection.

- Minimise fluctuations in T and RH by locating storage and display areas away from external walls and sources of heat and moisture such as kitchens, bathrooms, attics and basements.
- Create a buffer against ambient conditions by placing objects into storage boxes.
- Keep areas clean and regularly check for pest and mould activity.

Light

Visible and ultraviolet (UV) light can cause irreversible damage to photographs. Damage from light can cause fading, colour shift and contribute to chemical reactions resulting in discolouration and brittleness.

- Limit exposure to light.



The damage on the glass plate negative (above) occurs when the gelatine emulsion swells and contracts in response to changes in humidity. The emulsion eventually lifts completely off the glass base causing large areas of image loss.



- Avoid storing or displaying photographs in areas of direct sunlight or under artificial lighting.
- When displaying photographs, short display periods are recommended.
- For permanent display, use duplicate prints and place the original in appropriate storage.
- Keep incandescent light sources away from objects to prevent increase in surface temperature.
- Fluorescent tubes should be covered with UV-absorbing sleeves or covers, or replaced with non UV-emitting tubes.

Air Quality

Airborne pollutants, such as oxidant, acidic and sulphating gases attack all components of photographs and cause silver images to fade, discolour and mirror, and paper and board supports to deteriorate.

Sources of indoor airborne pollutants include volatile organic compound (VOCs) (including formaldehyde and hydrogen peroxide) from wood and wood products, paints, and varnishes; poor quality paper or plastic products; and fumes from common cleaning solvents. Particulate matter such as dust, greasy, abrasive soot and ash particles can settle on shelves and collection materials. Pollutants have a greater effect on objects when the humidity is above 35%.

- Keep collections boxed and away from pollutant sources.
- Keep storage areas clean.
- If air-conditioned, install gaseous and particulate filtration systems.
- Avoid shelves, cabinets and boxes made of wood and wood by-products.
- Powder coated steel or anodised aluminium shelving is recommended.
- Many commonly used items such as paint, cleaning solutions and photocopiers emit VOCs and should not be used near collections.

Housing

The use of appropriate housing is a significant factor in the care of collections. Be aware that many available materials for storing photographs are labelled 'archival', 'acid-free', and 'photo-safe' despite containing harmful components that can cause damage. Purchase storage material through a reputable conservation supplier and always request product specifications. Ideally, enclosures should meet the International Standard 'Photographic Activity Test' (PAT).

Consider the use of the object being housed, as well as the design and chemical stability of the enclosure. Damaged photographs may require conservation treatment, or specialised housing, in which case seek advice from a photograph conservator.

Photograph albums

- Select album styles that allow prints to be safely removed such as those with slide-in polyester or polypropylene pages (e.g. Albox polypropylene albums). If attaching prints to album pages or mountboard, use a reversible system such as polyester photo corners. Avoid sticking prints down with glue as overtime glue can become discoloured and cause staining.



(7571 Lavarack Family Album, John Oxley Library, State Library of Queensland)

- Historic or original photo albums should be retained if important to the history of the object. In this case, albums can be boxed or wrapped in archival paper.
- Interleaving with archival (PAT passed) tissue is sometimes recommended and should be done judiciously as it adds bulk to the album and places stress on the binding.
- Leave photographs in original albums. You may damage the prints by trying to remove them and compromise the integrity of the album as a historical record. Pages can be carefully scanned or photographed to create a digital copy.

Plastic pockets / sleeves

- Suitable plastics for photograph housing are uncoated polyester ('Mylar') or polypropylene.
- Plastic sleeves can be a good option where original items are heavily accessed.
- In areas of high humidity be mindful of plastic housing as photographs may swell and stick. To help mitigate this risk, add a piece of unbuffered archival paper in behind the photograph.
- **Never laminate photographs** (or any valuable documents). The process is irreversible and damaging. Uncoated polyester ('Mylar') or polypropylene sleeves provide a safe alternative.

Paper folders / sleeves / enclosures

- In areas of high humidity, use paper based storage systems.
- House photographs individually in seamless paper enclosures.
- A good paper choice for housing is sleeves made from pure cotton cellulose paper, often called 'rag' paper in art shops.
- To make your own seamless paper folder, refer to our guide "*How to make a four flap enclosure*".

Boxes

- Storing loose photographs in appropriate enclosures, flat and stacked in boxes is suitable for most materials. You may choose to store individual photographs vertically in boxes with rigid dividers to prevent slumping. Never place anything on top of damaged, flaking or brittle collection items.



- When boxing glass plates they should then be arranged vertically on their long edge. Glass plate negatives should never be stacked; given their weight and fragility, the bottom plates will be susceptible to breakage.
- Pack boxes out with conservation grade materials to minimise object movement during handling.
- Where appropriate, label boxes 'fragile/glass' and 'heavy'
- Ensure shelving has adequate strength to hold the weight of the boxed items.
- To make a storage box, refer to our guide "*How to make an archival corrugated phase box*".

Handling

- Always handle your collection using clean hands.
- Hold photographs by extreme edges, or use clean cotton or plastic nitrile gloves.
- Fingerprints are extremely damaging to photographs. Over time, the acids and oils from your skin can discolour or fade the image, and etch into the surface of the photograph binder.
- Handle objects carefully to avoid mechanical damages such as crescent shaped handling dents, creases, tears, and cracks in the photograph.
- Use a support such as a piece of clean board to handle large or brittle objects
- Avoid the use of rubber bands, post-it notes, and metal fasteners such as paper clips and staples as they can stain or rust prints.
- Digitise or make copies of important, damaged or heavily used photographs. Use the duplicates as working copies and carefully store the originals.
- Do not repair photographs with pressure-sensitive tape. This material is extremely damaging over time. Consult a professional photograph conservator to undertake conservation treatments.

To label photographs

- Use a very soft graphite pencil (e.g. 2B or 4B), on the edge of the back of the print.
- Place the photograph face down on a clean, dry, hard surface and write gently as pressure can damage the photographic emulsion.
- Do not use pens or markers as they can bleed through and stain the front of photographs.

Useful Websites and Texts

- AICCM Australian Institute for Conservation of Cultural Material www.aiccm.org.au
- AIC American Institute for Conservation www.conservation-us.org
- Image Permanence Institute, *Graphic Atlas*, Rochester Institute of Technology, www.graphicsatlas.org
- Image Permanence Institute, *Image Permanence Institute*, Rochester Institute of Technology, www.imagepermanenceinstitute.org/
- Baldwin, Gordon, and Jürgens, Martin C, *Looking at Photographs, A Guide to Technical Terms, Revised Edition*, Getty Conservation Institute, Los Angeles, 2009

- Jürgens, Martin C, *The digital print: identification and preservation*, Getty Conservation Institute, Los Angeles, 2009
- Lavédrine, Bertrand, *A Guide to the Preventive Conservation of Photograph Collections*, The Getty Conservation Institute, Los Angeles, 2003
- Lavédrine, Bertrand, *Photographs of the Past, Process and Preservation*, The Getty Conservation Institute, Los Angeles, 2007
- Pénichon, Sylvie, *Twentieth-century color photographs: Identification and care*, California Getty Conservation Institute, Los Angeles, 2013
- Reilly, James M, *Care and Identification of 19th-Century Photographic Prints*, Eastman Kodak Company, 1986
- Wilhelm, H., *Wilhelm Imaging Research*, <http://www.wilhelm-research.com/>. At this website you can also download for free Wilhelm, H., *The Permanence and Care of Colour Photographs*, Photographs Preservation Publishing Company, 1993
- Find a conservator in private practice through the Australian Institute for Conservation of Cultural Material (AICCM) www.aiccm.org.au

The procedures described here have been used by State Library of Queensland in the care of its collections and are considered suitable by State Library as described; however, State Library will not be responsible for damage to your collections should damage result from the use of these procedures.

Need further information?

(07) 3840 7810 | www.slq.qld.gov.au/preservation



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