

# Photographs

What are photographs?

Photographs are one of the most interesting aspects of most RSL and community heritage collections, but they can easily deteriorate without proper handling, storage and care. There are many different photographic processes ranging from common ones, such as silver gelatine prints on paper, to less common, such as matte colloidon prints. Negatives are an important part of photographic collections

What are photographs made from?

Photographs consist of an image layer on a base material. The image layer consists of a light sensitive chemical (often silver halide) in a carrier or emulsion layer (often gelatine or albumen). The base material is usually paper or glass. Negatives are made of glass or a plastic film such as cellulose acetate with an emulsion layer. When a negative is exposed to light (when the picture is ‘taken’) a ‘latent image’ is created; this latent image is then made visible and stable by chemical development and printing.

**What are the main** threats **to photographs?**

* fluctuating humidity and dampness
* light (sunlight, artificial light, being on display for too long)
* high levels of heat
* dust
* acidity – from mounts and/or generated within the paper of the photo by its wood pulp content
* degradation of the silver or emulsion (gelatine or albumen)
* residual developing chemicals
* degradation of plastics such as acetate or cellulose nitrate
* degradation of photographic dye chemicals
* skin oils and sweat
* neglect and careless handling
* incorrect attempts at repair or cleaning
* insects and mould
* incorrect storage and display materials
* theft and loss
* disasters both large (fires, floods) and small (roof leaks, coffee spills).



**Should I touch photos?**

This image shows a photo album being handled with white cotton gloves to stop oils from hands damaging the photographs. This is the best way to handle photos and albums.

Every RSL, community museum and historical society should have several pairs of clean white cotton gloves for handling photos and objects.

How do these threats damage photographs?

* Water will stain and weaken paper and make emulsions sticky.
* Damp will promote mould growth, foxing and insect attack (silverfish eat the invisible mould that grows on the surface of photographs).
* Insects can eat most of the components of photographs – paper and emulsion.
* Mounted or unmounted photographs stored loose in a drawer can crush, abrade or scratch each other’s surfaces.
* Light will fade colours, accelerate ageing and cause yellowing and weakness.
* Acidity causes paper to become yellow or brown and brittle. Eventually the paper may break into many small fragments.
* The acidity from the inner layers of window mounts will cause ‘mat burn’ (dark brown staining).
* Hand grease, hand cream and sticky mounting materials such as Blu Tack will leave greasy or oily stains on photographic paper.
* The adhesive from transparent and masking tapes and lamination film will cause brittleness and dark brown staining of photographs.
* Staples will cause holes, and if the staple corrodes this will cause rust staining.
* PVC gives off a mild acid and sticky plasticiser which damage objects.
* Acidity from timber and plywood will accelerate the deterioration of photographs.
* Ink from biros and felt tip pens is not easily removable – only use pencil to label photographs. Never write on the front or back of the image area. Apply numbers at the edges.

Caring for photo albums

Many albums contain a mix of photographic techniques including tin type gelatine and albumen photos as well as images cut from newspapers and glued into place. They should be stored in a clean, dry environment. To ensure that the different materials do not harm each other, acid-free unbuffered tissue should be interleaved in the pages as a protective measure. A professional photographic conservator can advise about storage techniques.

General Principles

DO

* Do store photographs in a cool and dry place; basements, attics and garages are not suitable.
* Do store photos in clear Mylar (polyester) or polypropylene envelopes or acid-free un-buffered envelopes or boxes.
* Do put each photograph in its own protective enclosure. Individual photographs in envelopes should be boxed.
* Do avoid albums with self-stick plastic-covered pages (the adhesive on the mounting pages can stain and damage photos).
* Do think twice before removing photographs from old albums: it could be damaging and the albums are important documents in their own right. Do be careful when framing photographs. They should never come into contact with glass (in case they stick) and should be positioned with an archival quality mat.
* Display copies rather than original photographs as original photos fade very fast.

**DON’T**

* Don’t store photos in plastic such as PVC, as it produces damaging reactions.
* Don’t store photos in non archival paper or cardboard, as it may become acidic over time.
* Don’t store photos with sulphur-containing materials such as paper, boards and rubber bands.
* Don’t use white glue, rubber cement, Scotch or masking tape, or staples for mounting photos in albums.
* Don’t write inscriptions directly on photographs (back or front) as they may leave indentations. Instead write on storage envelopes
* Don’t mend photographs using self-adhesive sticky tapes of any kind.
* Don’t display photographs in direct sunlight or under bright lights, and keep them away from heat vents and damp locations.
* Don’t put photographs on display in permanent or long-term exhibitions – use copies
* Don’t laminate original photographs. This is an irreversible process.

**What are buffered and unbuffered archival products?**

Most historic paper is acidic which is caused by lignin from the wood pulp used to make the paper. This acidity attacks the paper fibres and leads to yellowing and brittleness.

All archival tissues, papers and boards are made from materials that are naturally low in acid such as cotton or highly purified wood pulp. Buffered products have an alkaline material (chalk) added. This is very beneficial because it soaks up the acidity given off by degrading paper and helps it to last longer.

But the alkaline buffer can be harmful to materials made from protein such as silk, wool, and gelatine and albumin photographic emulsions. For these it is better to use unbuffered products. These products are also known as pH neutral.

Buffered and unbuffered products can be purchased from archival suppliers.



**Responding to water damage and mould**

This mount and photo of a troopship (1916) was damaged by water in the past. The best approach is to store this photo and mount in a clean, dry environment and not expose it to light by displaying it. If this photo was of special significance, a specialist photographic conservator could be consulted.

*Photo courtesy Royal Historical Society of Victoria*

REMEMBER

* Before you do ANYTHING, consult a photographic conservator.
* Before you start, ALWAYS look at the list of resources at the end of this flyer. There will be detailed information already available.
* Never give up – something that looks ‘hopeless’ can often be recovered.
* All photographs will age – it is the speed at which this happens that you can influence.
* It is no disgrace for an photograph to look its age and reflect its history.
* Excessive or aggressive cleaning and commercial adhesives can cause an enormous amount of harm.
* Photographs are very delicate and must be handled carefully.
* Correct storage is the best way to preserve them for the future.
* Unlike paper, photographs are best stored with archival quality, acid free UN-BUFFERED tissues and boards. The alkaline buffer can damage gelatine and albumen emulsions.
* The original frames and mats may have historic importance and should not be discarded. Many photographers signed their names or put the name of their studio on window mats.



**Framing photos**

This image shows an **incorrect** way to frame photos. Do not use materials such as plywood or masking tape, as these are very acidic and the acid will attack the paper. Always have photos framed by a professional framer using archival quality materials. Masking tape and glue should never be used.



**Labelling photos**

This photo album has been spoilt by someone labelling the photos in biro. If you must label photos directly, use a soft lead pencil like HB or 2B on the back edge of the photograph or edge of album pages, and press lightly to avoid indenting the surface. Alternatively (and preferably), utilise a method of cataloguing which does not involve marking the photo or album. *Photo courtesy Michele Summerton*



**Displaying photos**

This image shows a photographic display under a light which is too strong and too close. Such lighting will permanently damage these photographs. Use a low wattage globe and only display original photos for a short period of time – never in a permanent exhibition. Or use good quality copies: nobody will know the difference!

**Storage and preservation of photographs**

**Photo albums**

Many commercially available photographic albums are not suitable for the long-term storage of photographic collections. Some types of albums can damage photos. Ensure that you use archival quality photo albums and display materials.

**Safe, archival storage and display materials**

* plastics – low density polyethylene (LDPE), high density polyethylene (HDPE), polypropylene (PP), polyester, mylar, melinex, oven bags
* plastic sleeves – Labelled ‘copy safe’, polypropylene
* paper – acid-free, **non-**alkaline buffered or 100% cotton rag paper and tissue
* cardboard – acid-free, **non-**alkaline buffered or 100% cotton rag mount board
* acid-free alkaline buffered flat and corrugated cardboard may be used for boxes for photos in envelopes
* folders – polypropylene, acid-free cardboard
* albums – ring binders made from archival materials
* boxes – polypropylene, fluted polypropylene (Corplast, Corflute etc).

Unsafe storage and display materials

* plastics – PVC, bubble pack, glad wrap, lamination film
* plastic sleeves – PVC, plastics not labelled ‘copy safe’, lamination pockets
* paper – standard paper, glassine paper, grease proof paper, brown and kraft paper, coloured and standard tissue paper
* cardboard – standard cardboard and mount board
* folders – cardboard covered with vinyl
* albums – sticky albums, coloured or black non archival paper
* boxes – standard cardboard boxes.
* boards – masonite, chipboard, plywood, unvarnished timber.



Frames that damage photos

This frame will damage the photo because it is not acid free. But the frame itself has historical significance and its appearance is an important part of this lovingly home-made object. A copy of the photo should be placed in the frame and the original safely stored in the dark with archival storage materials to preserve all components of the item.

PHOTOGRAPHS IN PLASTIC BOXES AND SLEEVES – CAUTION ADVISED

If your storage environment is damp or not well controlled, it is safer **not** to use plastic boxes or sleeves to store photographs. Even inside archival plastic boxes and sleeves, condensation can start and may cause photos to stick to the plastic. It can also cause mould growth. Instead, use non-buffered acid-free paper and cardboard sleeves, envelopes and boxes with a copy of the image on the outside.

In a more stable environment it is possible to store photographs in plastic sleeves and boxes, provided some precautions are taken. When photographs are stored in plastic sleeves and boxes, acidity from the backing paper and board can build up. Even when archival plastics are used, this can make photos deteriorate faster than they would have outside the plastic sleeve. The flyer on Paper and Books recommends putting a sheet of acid free alkaline buffered paper into the plastic sleeve to absorb acidity. However, the emulsions (gelatine or albumen) of many photos can be damaged by alkaline conditions. Therefore a sheet of acid-free **non-alkaline** buffered paper should always be put into the sleeve behind the photo to absorb the acidity its paper gives off.

Where photographs, negatives or films are giving off a strong plastic or vinegar smell (off-gassing), they should be stored in acid-free, alkaline buffered paper sleeves inside plastic sleeves or boxes. They should be separated from other photographs in the collection. Otherwise the chemicals they emit can damage the rest of the collection as well as accelerating their own deterioration. Consult a conservator about photos in this condition as they can deteriorate rapidly.



**Storing photographic materials (photos, slides, negatives)**

Avoid storing photographic materials in plastic.

There is a danger that the photographic emulsion will stick to the plastic if the storage area is damp. A safer choice is acid-free paper envelopes with a copy of the image on the outside.

*Photo courtesy Michele Summerton*



**Photos, condensation and glass**

This photo from World War I is stuck to the glass of the frame. This happens because condensation forms inside frames and makes the gelatine slightly sticky. Photos should never be put into a frame in direct contact with glass. A window mount of archival cardboard should be used to separate the photo from the glass. In this instance, a chemical reaction may have also occurred to cause the pink staining. A professional conservator should be consulted if you have photos stuck to glass, as the image can often be recovered.

RESOURCES

* ‘Guide to Identification of Photographic Processes’, Image Permanence Institute [graphicsatlas.org/](http://graphicsatlas.org/)
* ‘Scanning Photographs’ – Powerhouse Museum www.powerhousemuseum.com/pdf/research/dress\_register/ADR14.1\_scanning\_photographs.pdf
* ‘A Simple Mount for Photos and Documents’, Powerhouse Museum  
  www.powerhousemuseum.com/pdf/preservation/a\_simple\_mount\_for\_photos\_and\_documents.pdf
* ‘How to Make Photo Corners for Display’, Powerhouse Museum [www.powerhousemuseum.com/pdf/preservation/how\_to\_make\_photo\_corners\_for\_display.pdf](http://www.powerhousemuseum.com/pdf/preservation/how_to_make_photo_corners_for_display.pdf)
* ‘Products and Suppliers List’, Powerhouse Museum [www.powerhousemuseum.com/pdf/preservation/products\_and\_suppliers.pdf](http://www.powerhousemuseum.com/pdf/preservation/products_and_suppliers.pdf)
* The State Library of Victoria has a number of useful guides: www.slv.vic.gov.au/explore/conservation-guides
  + [Caring for Photographs](http://www.slv.vic.gov.au/explore/conservation-guides/caring-photographs)
  + Dealing with Mould
  + Dealing with Pests
  + [Framing Artworks on Paper](http://www.slv.vic.gov.au/explore/conservation-guides/framing-artworks-paper)
* The National Film and Sound Archives Care has a number of useful guides on audiovisual materials   
  [www.nfsa.gov.au/preservation/care/](http://www.nfsa.gov.au/preservation/care/)
  + [Caring for Photographs](http://www.nfsa.gov.au/preservation/care/caring-for-photographs/)
  + [First Aid for Fire Damage](http://www.nfsa.gov.au/preservation/care/first-aid-fire-damaged-audiovisual-materials/)
  + [First Aid for Water Damage](http://www.nfsa.gov.au/preservation/care/stabilising-audiovisual-after-floods/)
* The National Archives of Australia has a large amount of useful information on preservation www.naa.gov.au/records-management/agency/preserve/physical-preservation/index.aspx
  + Preserving Photographs
  + Archival Papers and Products
    - Choosing the Right Paper
    - Archival Quality Paper Products
    - Rules for Use of 'Archival Quality' Certification Trademark
    - Register of Certified Archival Quality Products
    - About the Photographic Activity Test
  + Other Advice on Physical Preservation
    - Recovering Flood-damaged Records
    - Recovering Fire-damaged Records
    - Integrated Pest Management
    - Creating a Time Capsule
    - Displaying Archival Records
* reCollections: Caring for Collections Across Australia [www.collectionsaustralia.net/sector\_info\_item/3](http://www.collectionsaustralia.net/sector_info_item/3)
* American Institute for Conservation – Caring for your Treasures – Photographs http://www.conservation-us.org/index.cfm?fuseaction=Page.ViewPage&PageID=633

**Specialists**

* Australian Institute for the Conservation of Cultural Materials (AICCM) www.aiccm.org.au/index.php?option=com\_content&view=article&id=37&Itemid=36
* Professional Picture Framers Association (PPFA) www.pmai.org/PPFAContent.aspx?id=2048

**Suppliers of archival materials**

* ‘Products and Suppliers List’**,** Powerhouse Museum [www.powerhousemuseum.com/pdf/preservation/products\_and\_suppliers.pdf](http://www.powerhousemuseum.com/pdf/preservation/products_and_suppliers.pdf)
* ‘Specialist Services and Suppliers’, Australian War Memorial www.awm.gov.au/collection/conservation/suppliers/
* ‘Preserving Physical Records’, National Archives of Australia

www.naa.gov.au/records-management/agency/preserve/physical-preservation/index.aspx

Where can I get this and other fact sheets? The DPC Preserving war heritage and memorabilia fact sheets provide information about the care and conservation of a range of heritage material. They can be downloaded at **www.dpc.vic.gov.au/veterans/factsheets**

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