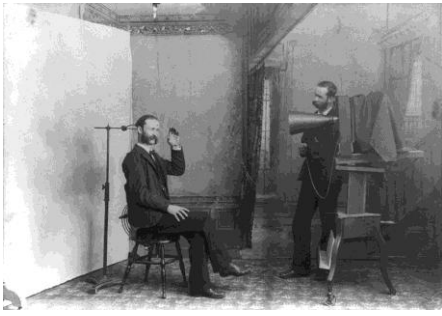


# Fundamentals of the Conservation of Photographs



---

**SESSION:** Introduction to Collection-Level Surveys and Condition Reporting

**INSTRUCTOR:** Monique Fischer, Tram Vo

---

## SESSION OUTLINE

### ABSTRACT

This part of the course will provide systematic approaches to writing condition reports for photographs and performing collection-level surveys. This section of the course will provide students with the information needed to perform the small scale survey during the distance mentoring phase.

### LEARNING OBJECTIVES

As a result of this session, participants should be able to:

- Understand photographic materials, processes, and deterioration characteristics in order to write a proper condition report.
- Know how to implement a systematic preservation program and understand issues such as environmental control, disaster preparedness, storage and handling, potential hazards, reformatting and conservation treatment.
- Understand that performing a survey is the best way for a collection to survive.

### CONTENT OUTLINE


- Introduction with PPT presentations: "Condition Reporting of Photographs" and "Surveying Photograph Collection"
- Examples of different condition report forms, including electronic formats, will be examined and discussed. Samples will be provided to participants.
- Provide students with a basic outline of a survey report and discuss.
- Pros and cons of the condition report and survey form hand -outs will be discussed.
- "Hands-on" exercise: provide each student with an unknown photograph and have them write a complete condition report using a form that has been made available.
- Students will present reports in class.
- During the distance mentoring phase students will conduct a survey of their family photographs. The introduction given during the summer school will provide the information students need for this activity.




## BIBLIOGRAPHY

 = Essential reading material

 = Available online

 Fischer, Monique. Photographic Materials Terminology and Photographic Condition Reporting Terms (see below)

  Patkus, Beth. 2003. *Assessing Preservation Needs: A Self-Survey Guide*. Andover, Mass.: Northeast Document Conservation Center. <http://nedcc.org/resources/downloads/apnssg.pdf>.

 Reilly, James. 1991. Preserving photograph collections in research libraries: A perspective. In *Photograph Preservation and the Research Library*, ed. Jennifer Porro, 7-17. Mountain View, Calif., U.S.A.: Research Libraries Group, Inc.

## PHOTOGRAPHIC MATERIALS TERMINOLOGY

**Acetate:** A transparent plastic base for photographic film made by treating cellulose with acetic acid.

**Albumen print:** A printed-out paper with albumen (egg-white binder) which produces an image that is purplish or reddish brown on a thin paper support. The surface is usually semi-glossy. Deterioration includes a crackle pattern seen in dark highlights; usually yellowing of highlights; paper fibers visible through albumen coating. This was the dominant photographic printing process in the 19<sup>th</sup> century.

**Ambrotype:** A wet collodion positive process on a glass base, which is placed in contact with a black backing or ruby glass to form a positive image. Also, housed in cases like daguerreotypes and used from 1855 to 1865; extremely popular in the late 1850s.

**Autochrome:** The first commercially successful color process manufactured by the Lumiere brothers of Lyon France from 1907-1933. The emulsion consisted of irregularly shaped red, green and blue potato starch grains on glass and after 1920 on nitrate film.

**Baryta:** A layer of barium sulfate in gelatin applied to the surface of photographic paper base to provide opacity, smoothness, and brightness.

**Base (support):** Material on which the emulsion lies; common bases include paper, copper, iron, glass, and plastics such as nitrate, acetate, and polyester. Not to be confused with secondary supports.

**Binder (emulsion):** Transparent layer of gelatin, albumen, or collodion that holds the light-sensitive materials.



---

## SESSION OUTLINE CONT'D.

**Cabinet card:** Photographic print on a secondary support (mount) of decorative cardboard measuring 4 ¼ by 6 ½ inches. This format came into use after 1866 and became popular for high quality portraiture.

**Carte de Visite:** A small photographic print on a secondary support of decorative cardboard measuring 2 ½ by 4 ¼ inches. This process was patented by André Adolphe Disdéri in the 1854 and was used until the early part of the 20<sup>th</sup> century.

**Chromogenic color process:** The bulk of 20<sup>th</sup> century color photographic materials belong to this process. It was invented by Rudolph Fischer, German chemist, prior to World War I. The development process creates a dye (cyan, yellow, or magenta) around a black-and-white silver image. The black-and-white image is bleached out leaving the formed dyes. Commercial products include Kodachrome, and Ektachrome as examples.

**Collodion:** Binder that is a mixture of cellulose, nitric and sulfuric acid, and potassium iodide. Used for paper prints as well as ambrotypes, glass plate negatives, and tintypes.

**Collodion Print:** A printed-out paper with either a glossy (sepia, purple color) or matte surface (gold or platinum toned, black color) using collodion as the binder. These photographs are very stable image and rarely faded. They easily abraded and are usually mounted. Glossy collodion prints often exhibit a subtle rainbow effect on their surface when viewed under florescent lights. The dates are 1888 – c. 1910: Glossy is late 1880s–1920s and matte is 1894 – 1920s.

**Crayon enlargement or portrait:** A lightly printed enlarged photograph finished with pastels, crayon, or charcoal. This form of portraiture was popular from the 1860s to the early 20<sup>th</sup> century.

**Cyanotype (blueprint):** A photographic process resulting in a distinctive blue photograph. It was invented in 1842 but not used until the 1880's.

**Daguerreotype:** A positive-negative image produced on a thin silver-plated copper base, which produces a mirror-like quality. Occasionally hand colored and often placed in a case with brass mat and preserver and protective piece of cover glass. Tarnish can form on the support. The process was popular in the United States from 1840 to 1860.

**Developing-out paper (DOP):** Photographic paper which forms a visible image through the use of a chemical developer to reveal the latent image made by exposure to light. DOP prints are cool in color - - blue, neutral, or black -- unless they have been toned. They may be either contact-printed or enlarged from a negative.

**Dye diffusion transfer process:** The process used for color Polaroid images. The cyan, yellow and magenta dyes are present in the film prior to exposure. Chemicals aid the transfer of dyes to the receiving paper after exposure.

**Dye Imbibition Process:** A color print made from matrices (gelatin relief images) produced from three separation negatives (cyan, yellow and magenta) and transferred in register to a support. Commercial products include Kodak dye transfer and Eastman wash-off relief as examples.



---

## SESSION OUTLINE CONT'D.

**Gelatin:** A protein obtained from naturally occurring collagen. Used as a binder for the image layer of photographic materials.

**Light sensitive (imaging) materials:** The component of the photograph that absorb and scatter light to produce the image. Light-sensitive materials include silver halide, iron, and platinum.

**Nitrate:** A transparent plastic base for photographic film obtained from the treatment of cellulose with nitric acid. Used in the United States until 1949.

**Platinum print (Platinotype):** A gray-black print with a matte surface and rich velvety texture. The process was popular with art photographers from 1880 to the 1930s. The images are very stable with no fading or silvering. However, the paper base can become acidic and discolor.

**Polyester:** A transparent plastic base for photographic film that is strong and stable. It is composed of a polymer of ethylene glycol and terephthalic (or naphthalene dicarboxylic) acid.

**Printing-out paper (POP):** A photographic paper which forms a visible image from the reaction of light on light-sensitive materials. POP prints are warm in tone, tending towards a brown, purple, or reddish color. They are almost always made in contact with a negative.

**Resin-coated paper:** A polyethylene film applied to both sides of photographic paper base for the purpose of speeding processing and drying.

**Silver dye bleach process (Cibachrome, Ilfochrome):** Color images of excellent dark stability with a plastic base. The chemical type used in this process is called azo dyes.

**Silver gelatin print:** Print consisting of a paper base and gelatin binder that contains silver bromide and/or silver chloride particles. The earliest silver gelatin prints were made on printing-out paper. They were followed by prints on developing-out paper (see above).

**Tintype (ferrotype, melainotype):** Photograph consisting of an iron support with collodion binder, and coated with a black varnish ("Japanned surface") containing raw linseed oil, asphaltum and pigments. The plate bears the negative image made to look positive by the opaque enamel. It was first introduced in 1856 and used until circa 1930s.

## PHOTOGRAPH CONDITION REPORTING TERMS

**Abrasion:** Mechanical wearing away of the surface, caused by friction.

**Accretion:** Material deposited on a surface, such as insect specks, paint drops, etc.

**Adhesive residue:** Stain or residue left behind from glue, paste, or pressure-sensitive tape.

**Channeling:** Buckling of the emulsion caused by base shrinkage found in deteriorating cellulose acetate negatives (safety film).



---

## SESSION OUTLINE CONT'D.

**Cockling:** A wrinkle or distortion without a crease. In paper, warping and uneven shrinkage may cause cockling and keep the photograph from laying flat.

**Crackling:** Pattern of fine cracks that occur in the emulsion layer of a photograph as a result of the shrinkage of the emulsion from its base.

**Crease:** Line of crushed or broken fibers, generally made by folding. A dog-ear is a diagonal crease across the corner.

**Delamination:** Separation of individual layers such as the lifting of emulsion from the base of photographic glass plates or prints.

**Dent:** Dip in the surface of the emulsion and/or paper, which has not torn.

**Discoloration:** Partial or overall change in color caused by aging, light, or chemical agents. Yellowing and darkening can occur, as can bleaching, fading, loss of color or change in hue.

**Embrittlement:** Loss of flexibility causing the material to break or disintegrate.

**Ferrotyping:** Shiny patches on the surface of a photograph that have developed as a result of long-term contact with a smooth surface, generally in the presence of moisture.

**Flaking:** Separation or lifting of photographic emulsion from the support.

**Foxing:** Brown or reddish brown spots associated with waste-products of micro-organisms.

**Glass deterioration:** Degradation of glass supports caused by exposure to high humidity. It can result in a hazy appearance, formation of liquid droplets, or layer separation in photographic glass plates.

**Inherent vice:** A weakness in the chemical or physical makeup of an object (e.g. yellowing of albumen, fading dyes in color photographs)

**Loss:** Missing area or hole.

**Mold:** Fungus that grows on polymer or organic materials exposed to high humidity; causes material degradation.

**Pest damage:** Surface loss, holes, flyspecks, etc., obviously caused by insects or other pests.

**Red spot or redox blemishes:** Small colored spots, usually red or orange, caused by localized oxidation of black-and-white images. Found on microfilm and resin-coated papers.

**Scratch:** Linear surface loss due to abrasion with a sharp point.

**Silver mirroring, silvering:** Bluish or shiny discoloration in the shadow (dark) areas of a photographic image caused by oxidation of the elemental silver, creating a mirror-like appearance.



---

## SESSION OUTLINE CONT'D.

**Surface grime:** Dirty material either loosely distributed (dust) on or firmly ingrained in the emulsion/support.

**Stain:** A soiled or discolored spot.

**Tear:** A linear break in the support resulting from poor handling.

**Vinegar syndrome:** A slow form of chemical deterioration of cellulose acetate film caused by poor storage conditions. It is so named because, as film degrades, it gradually shrinks, becomes brittle, and generates acetic acid, which evaporates into the air, producing a sharp, vinegar odor.

**Yellowing:** A change in color caused by aging, light, or chemical means.

©2008 J. Paul Getty Trust

