Dioramas and the public

Annette Scheersoi
Visitor experiences at dioramas

Preparing spectacular visits

Utz Anhalt
World Heritage site Isfahan: Where museums and historical buildings merge into a Persian fairy tale

From the newsdesk

New museums

Andreas Teltow; Ines Hahn

Team of Museum fuer Kunst und Gewerbe
Dressed. 7 Women - 200 Years of Fashion at Museum fuer Kunst und Gewerbe Hamburg (MK&G)

Team of Bildmuseet and Gropius Bau
Zanele Muholi

Team of Kunstmuseum Den Haag
Alphonse Mucha

Team of Wallach Art Gallery
What Is The Use Of Buddhist Art?

Maria-Katharina Lang and team of the Weltmuseum Wien
Dust & Silk. Steppe and Silk Roads

New museum hardware and technologies

Bastian Eclercy
New wall colours, new LED lights at Staedel Museum Frankfurt

Vera Maria Felicitas Hammer
The National History Museum in Vienna has re-arranged Austria’s rich mineral treasures

Network news

Discussions from professional lists. This time: 1) “Museum Gel” 2) Nudes: How to deal with?

Repair your network
A schedule for activists

Conservation projects

Monique C. Fischer; Terra Huber
Finding a balance: Conservation of the Dolley Madison Cased Image from Greensboro History Museum

Paul-Bernhard Eipper
Degradation of Chrome Yellow (2PbSO4/PbCrO4) and Cadmium Sulphide (CdS) on Works of Art

The dark side

Christian Mueller-Straten
Learning from good old stories: The Denis Lucas case

Title page: Interior view of one of the domes of the Shah Mosque, Isfahan, Iran. The mosque, part of the UNESCO World Heritage site, is considered one of the masterpieces of Persian architecture. Source: Wikimedia Common/Diego Delso, see pp. 12ff.
Conservation projects

Monique C. Fischer; Terra Huber

Finding a balance: Conservation of the Dolley Madison Cased Image from Greensboro History Museum

Named after the inventor, Louis Mandé Daguerre, the daguerreotype process was formally introduced in Paris, France in 1839. Samuel Morse brought the daguerreotype process to America, and in September of that year, the first American daguerreotypes were made.

The daguerreotype differs from paper-based forms of photography since each daguerreotype is a one-of-a-kind image distinguished by its metallic composition on a silvered copper plate. However, this material also made the daguerreotype more vulnerable to marring, abrasion, tarnish and corrosion. As a result, protective housing was a necessity.

These protective housings also had a decorative function, often elaborately wrought and forming elements of considerable aesthetic and historic value, integral to the entire artifact. The preservation of the daguerreotype package will also depend upon the integrity of the housing.

Daguerreotype conservation at NEDCC

NEDCC recently conserved a Mathew Brady daguerreotype image of Dolley Madison and her niece Anna Causten, and while the treatment of the plate followed standard methods, the conservation of the blue velvet case used a unique approach.

Dolley Payne Todd Madison (May 20, 1768 - July 12, 1849) was born to Quaker parents on a small farm in the New Garden community of Guilford County. Dolley became one of the most beloved first ladies, and the only one from North Carolina. She inspired citizens of her time and forged a legacy that other presidential spouses have sought to emulate. Dolley was the wife of the fourth president of the United States, James Madison, who held the office from 1809 to 1817. She was noted for her social graces, which boosted her husband’s popularity as President and earned acclaim as the most popular and influential woman in the city of Washington. In this way, she did much to define the role of the President’s spouse, known only much later by the title First Lady.

James Madison died in 1837 and Dolley returned to Washington City in 1844, where she had a significant presence in the capital. She knew all 12 presidents, having taken tea with George Washington, attended the inauguration of James Polk, and met with Zachary Taylor. In her final years, she performed her most symbolic acts and re-
Received her highest honors: sending the first private telegraph message and accepting her own seat in the House.

During that time, Mathew Brady made a conscious effort to capture the likenesses of the last of the founding generation, and Dolley made the list. One of two daguerreotypes of Dolley taken by Brady – this quarter plate – depicts Dolley Madison with her favorite Niece Anna Causten who cared for Dolley in the last years of her life. Dolley Madison died shortly after these daguerreotypes were taken on July 12, 1849.

Mathew Benjamin Brady (c. 1822-1824 - January 15, 1896) is best known for his many daguerreotypes and scenes of the Civil War. He studied under the inventor Samuel F. B. Morse, who pioneered the technique in America. Brady opened his own studio in New York City in 1844, and photographed Andrew Jackson, John Quincy Adams, and Abraham Lincoln, among other public figures. Source: Library of Congress
Conservation

Due to the object’s provenance, photographer, historical context, and significance as one of two photographs taken of Dolley Madison, this cased image is an important piece in the museum’s collection and was in real need of conservation treatment. The cased image arrived (via courier) at NEDCC in a clam-shell box in the spring of 2016 for examination and conservation treatment.

When it arrived at NEDCC, it was housed in a case that was structurally compromised. The plate was sitting very loosely within the case and it was very difficult to handle. Once the conservation proposal was approved by the museum, the process began by disassembling the daguerreotype package and placing it in temporary housing as seen here.

Since 1963, the quarter plate had been loosely housed in the blue velvet case, which was created to resemble a book. The daguerreotype plate was sealed with a brass mat and cover glass but no brass preserver. The edges of the daguerreotype plate were tarnished. The plate was scratched along the edges where the brass mat had been in contact with the plate. There was a slightly deeper scratch above the sitter’s heads along the top edge. The plate had been taped in place with Filmoplast™ P tape.

The conservation treatment at NEDCC started with the stabilisation of the daguerreotype plate which included the following: placing the daguerreotype plate in a custom Z-tray made from a polyester sheet that was made
Conservation projects

to prevent the plate from moving in the case and to provide protection from the brass mat.

The original brass mat, which holds the daguerreotype package together, was missing. In order to reseal the daguerreotype package, Filmoplast™ P-90 was toned with Teppachi water colours from Japan (pigments mixed with a binding medium such as high-grade starch and gelatin) to a colour similar to the brass of the original preserver. The gold colour of the Teppachi mixed with Windsor and Newton™ “Indian Red” created a tone/colour closer to the original brass mat.

The cover glass was replaced with a more stable borosilicate glass and then sealed with the toned Filmoplast™ P-90. Prior to sealing the daguerreotype package, notes were taken about the plate mark or any edge markings and noted along the back edge of the tape in pencil.

Once the plate had been stabilized it was put back in its temporary housing, waiting for the conservation of the case, which is really the star of this treatment.

A brief history of cases

As mentioned in the introduction, the conservation and preservation of the daguerreotype case is just as important as the plate itself.

The preferred cases for daguerreotypes in the United States grew out of the tradition of portrait miniatures. These small encased paintings were usually executed in gouache, watercolour, or enamel and developed out of the techniques used to paint miniatures in illuminated manuscripts. Popular among 16th cent. elites in England and France, portrait miniatures spread across the rest of Europe in the middle of the 18th cent. The English style of portrait miniatures was exported to the American Colonies, where it remained highly popular until the development of daguerreotypes and photography in the mid-19th cent. Daguerreotypes were often called miniatures as well, and the similar size and delicacy of medium allowed for an easy translation of wooden cases from portrait miniatures to daguerreotypes.

The cases served to house and protect the vulnerable silver image surface. The daguerreotype plate, brass mat, and glass were held together by a brass preserver and this package was placed in a tray of the case. The other tray held a velvet pad that served as a placeholder and also protected the glass.

Cases were made of two shallow wooden trays hinged together and covered with cloth, leather, or paper. Union Cases, introduced in 1853, were made of an early thermoplastic formed from saw dust, pigment and shellac that was pressed in heated dies to form relief designs. In the late 1840s, when the Dolley Madison image was captured, luxury cases resembling books began to be manufactured. These could be made of papier-mâché inlaid with mother of pearl in floral patterns, or wooden cases covered with velvet, silk, morocco leather, or imitation tortoiseshell. The velvet or silk was often blue, red, or green and may be plain, have stamped decoration, or have an object such as a cameo inset in the cover. The edges of these book cases were gilt or painted gold to resemble an edge gilt text block and sometimes had clasps at the fore edge.

This video of the Khan Academy introduces into the complicated technology of daguerreotypes.
The Dolley Madison daguerreotype case

The Dolley Madison daguerreotype was housed in a book-style wooden case covered in blue velvet that had been stamped in gold and blind. Although velvet-covered book-like cases were common, the gold stamped floral motif is a rare design. In accordance with this type of case, the walls of the trays were gilt and two metal clasps held the case closed at the fore edge. The trays were hinged on the inside of the spine with a piece of purple sheepskin.

These thin, fragile materials had failed and the structure of the case was severely compromised. The tail edge wall of the upper tray was loose. The spine edge wall of the lower tray had completely split and there were small gaps between the break edges of the wood. This detached spine piece was still hinged to the upper tray spine, but the leather hinge was very fragile and had several splits. The head and tail edge walls of the lower tray were missing. A previous attempt had been made to fill the missing lower tray tail edge with mat board.

Treatment of the case began with lifting the covering velvet from the spine. The spine edge of both trays and the lining paper was mechanically reduced from the wood and velvet.

The velvet pinch pad remnants from the spine edge and fore edge of the lower tray were removed, as was the leather inner spine hinge. The pasteboard of the pinch pads was split open and mechanically reduced. The loose wall on the tail edge of the upper tray was removed.

The tray wall was then re-adhered with fish glue and clamped while drying.

The velvet cushion was mechanically removed from the upper tray in preparation for spine hinging and because it was mostly detached.

The spine side wall that had split from the lower tray had to be secured in place with an inner spine hinge before the split in the wood could be repaired. A temporary mend was lightly adhered to the outside of the split using thin kozo tissue and wheat starch paste. The spine edge of blue paper in the lower tray was lifted and a Melinex™ guard was inserted in place.

Senka-shi kozo tissue (Hiromi™ HM-37) was toned with acrylic paints to match the removed leather hinge. It was adhered under the lifted paper on the lower tray with wheat starch paste and then to the detached spine edge wall. The paper was then pasted to the upper spine edge and upper tray in the same manner, creating an inner hinge similar to book repair techniques. The lifted blue paper was pasted down and the temporary mend from outside of the spine was removed.

The edges of the split wood were well-worn and there were many gaps between the two pieces. An adhesive that could form a secure bond while filling losses was needed and the two-part paste epoxy Araldite™ 1253 was chosen. Araldite™ 1253 dries to a mahogany colour and can be sanded, carved, painted, and stained. Once mixed in a 1:1 ratio, the epoxy has about 20 minutes of open time and cures in about 6 hours at room temperature.

A jig was created out of mat board so that the tray could be lightly weighted. The split between the lower tray and its spine edge wall was re-adhered and the gaps were filled by working the Araldite™ into the loss. It was allowed to cure and the excess was sanded away.

The case was repaired by reattaching the cover and repairing the broken spine following the techniques used when rebacking a book. Senka-shi kozo tissue (Hiromi™ HM-37) was toned with acrylic paints and adhered to the upper tray under the lifted velvet with wheat starch paste. The loose velvet of the spine was adhered to the repair tissue.

The spine repair tissue was then pasted under the velvet covering on the upper tray. The tissue was not adhered to the wooden spine itself, leaving a hollow that would allow the velvet to move away from the spine and avoid potentially damaging flexing when opening the case. All of the lifted velvet was put back down with wheat starch paste or Plextol™ B500 acrylic copolymer adhesive in order to avoid excessive moisture exposure.

The missing pieces of wood at the head and tail of the lower tray were replaced with water gilt balsa wood. Balsa wood was cut and sanded to match the size of the missing tray walls and coated several times with rabbit skin glue. French chalk was slowly added to warmed rabbit skin glue to form gesso. This gesso was applied in a number of layers to the balsa wood and, once dry, was sanded to better match the loss profile of the tray. Bole was prepared by mixing 1-part Armenian bole with 2 parts rabbit skin glue in a bain-marie. Numerous layers of bole were brushed onto the tray walls and then buffed smooth.

Gilder’s liquor was prepared with water, isopropanol, and rabbit skin glue and was used to re-wet the bole during gilding. The tray walls were gilt with multiple layers of 23 karat gold leaf. Some breaks in the gold were left in order to better harmonize with the worn gold of the remaining original tray walls. Once dry, the gold was burnished with an agate burnisher.

The tray walls were attached and gaps were filled with Araldite™ 1253. Once cured, the Araldite™ was sanded and inpainted with Teppachi gold paint.

Pinch pads were created for the head and tail edges of the lower tray using book cloth and were adhered with Plextol™ B500, as were the original velvet fore edge and spine edge pinch pads. The daguerreotype package was placed in the lower tray and the velvet cushion was adhered to the upper tray with Plextol™.
Before returning the object to the client, the housing it had arrived in was modified and a display was made. The inner opening in the housing’s foam was enlarged slightly and covered with Tyvek™ so that the edges of the case would no longer be abraded.

The cased daguerreotype was requested for loan to be part of an exhibit. Questions from Elise Allison at Greensboro History Museum included whether the case was stable enough after conservation to be exhibited, and how to mount for display. It was determined that the case was stable enough but the mounting of the case posed a different problem.

The idea was to display it as an open book inside a case. A profile sketch was made and the exact dimensions of the case were taken. This information, along with the image of the cased daguerreotype on a book cradle, enabled a mount maker hired by the Greensboro History Museum to construct a Plexiglas mount for exhibition. The sketch and photo provided guidelines on the angles of the mount and how far the case could safely be opened during exhibition.

**From Conservation to Exhibition**

The daguerreotype by Mathew Brady depicting Dolley Madison and Anna Payne, nee Causten, was part of “Saving Washington,” the inaugural exhibition of the new Center for Women’s History at the New York Historical Society Museum and Library in March 2017.
Quoting from a New York Times article *, the title is “a nod to Dolley Madison’s famous rescue of a portrait of George Washington from the White House during the War of 1812, before the British arrived and burned the place. But it’s also a metaphor for the complex ways that American women — well born and ordinary, free and enslaved — helped, as the show’s curator, Valerie Paley put it, ‘enact the Constitution on the ground.’”

For more images on the conservation of the Dolley Madison cased image and information about the project please [https://www.nedcc.org/about/nedcc-stories/dolley-madison-daguerreotype](https://www.nedcc.org/about/nedcc-stories/dolley-madison-daguerreotype)

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