

Rare Items, Precious Time: Devising an Efficient Workflow to Digitize Nineteenth Century Cased Photographs

Amy McCrory; The Ohio State University Libraries; Columbus, OH, USA

Abstract

This paper describes an effort to standardize digitization workflows for a large collection of nineteenth century cased photographs. Using what was learned during a project to digitize selected pieces for an exhibit, guidelines and diagrams to be used in digitizing the rest of the collection were created. The process had to take into account many factors, including the curator's multiple requirements for digitization; coordination with conservation treatment of the objects; the diversity of the materials in the collection; and processes involved in transporting the items between buildings on opposite sides of a large university campus. The guidelines were written with the goal of making the process more efficient so digitization of the rest of the collection could proceed at scale, as well as minimizing the time the photos would be outside of storage. They are presented here as a model for an organized approach to digitizing a substantial number of specialized objects.

Background

The Floyd and Marion Rinhart Collection of Daguerreian Art is held in the Ohio State University Libraries' (OSUL) Special Collections. OSUL acquired the collection in two separate acquisitions in 1972 and 1985. Originally a part of the Cartoon and Graphic Arts Library (now the Billy Ireland Cartoon Library and Museum), one of several repositories within Special Collections, it was later transferred to another of the repositories, the Rare Books & Manuscripts Library. The collection is housed in the Special Collections department's secure storage in Thompson Library, OSUL's central building. The collection includes, in addition to other photographic formats, over 2,100 nineteenth-century cased daguerreotypes, tintypes, and ambrotypes. During the second half of the twentieth century the Rinharts collected, researched, and published extensively on cased photographs and case art. While the photos include well known subjects such as Walt Whitman and John Wilkes Booth, most are anonymous, encompassing a broad range of ages, economic classes, cultural and ethnic backgrounds, and locations. Usage of the collection has included numerous reproductions in textbooks and local histories, as well as exhibit loans. With the exception of color images published in the 2011 Daguerreian Annual, all available reproductions from the collection were black-and-white negatives. Digitizing the full collection in color and at high resolution had been discussed for some time; the decision to proceed was propelled by a request in early 2017 to borrow 40 of the cased photos, along with an uncased tintype and a cabinet card, for an exhibit of early American photography at the Decorative Arts Center of Ohio.

The collection's curator wrote a proposal to send the pieces to OSUL's Preservation & Reformatting Department (P&R), which includes the Conservation and Digital Imaging Units, for inspection, repair, and digitization prior to the exhibition loan. She noted: "Before such a loan may be considered, we would like [the Head of Conservation] to do a close inspection of condition in order to flag any that are in danger of bacterial or chemical growths. While thus

exposed we request that [Digital Imaging] photograph them before [Conservation] re-seals the photos. Note that most seals were broken when the Rinharts acquired them. Ideally we would like these to be digitized now because they will need to be resealed for the upcoming exhibition." In addition, OSUL's Conservation Unit would be cleaning the glass, repairing broken case hinges, and restoring damaged preservers [Figure 1].

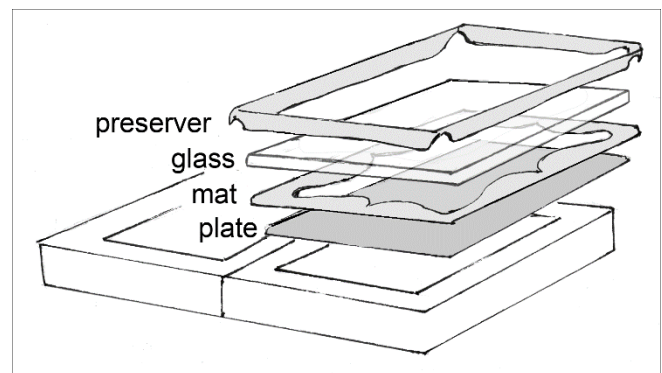


Figure 1. Parts of cased photograph.

Problem

Several factors worked against efficiency in digitizing the items selected for the exhibit. My initial assumption was that the plates would be digitized in and out of their cases, with the scope of the project to be production of high quality digital surrogates of the photographs. I had consulted useful and innovative examples of how to digitize daguerreotypes [1], [2], which focused on best practices for capturing the plates. However, the project proposal outlined a more comprehensive plan. Exterior shots of the cases from various angles would be captured as well, along with a shot of each case's interior after removal of the plates, reflecting the Rinharts' interest in the art and manufacture of nineteenth century photograph cases as well as photographs. From the curator's proposal: "While the images themselves are of extreme research interest across a variety of disciplines, the cases are also important potential sources for scholarly work. Each case represents particular technologies and aesthetics of design and use, and historians of photography would benefit from being able to consult photos of the cases...to learn more about the people who produced and used these photos." Each item would be represented by eight different images (nine if a hinge repair was made during conservation treatment), requiring different lighting setups.

The materials had to be transported across the campus. The Ohio State University (OSU) main campus is spread over 1,777 acres in the city of Columbus. Conservation and Digital Imaging are in a building located 1.5 miles from Thompson Library, where the Rinhart Collection is held. The collection's curator was concerned

about the offsite storage and handling of the materials, and the amount of time the plates would spend outside of their cases, vulnerable to potential environmental damage.

The 40 cased photos varied in type (daguerreotype, tintype, or ambrotype) and size (from 3.5 x 4.3 cm to 13.9 x 15.9 cm), and in the surface details of their cases. This made sense in that the pieces were selected for an exhibit, where demonstrating variety in photographic practices and case manufacture would be desired. In the context of digitization, however, this meant many additional adjustments to the lights and camera within each setup, adding to the length of time required to complete the work.

The need to take special care in handling the materials, and the time required to create all of the requested digital images, while scheduling digitization around the physical treatment in Conservation, came up against the pressure of having to complete the work in time for the exhibit. It became clear that if, as anticipated, we undertook at a later date to digitize the entire collection, it would be necessary to design a more standardized workflow.

Approach

Digitization work was coordinated with the Conservation staff's treatment of the items. The outsides of the cases were photographed in four separate shots—front, back, clasp side, and hinge side—and the plates were photographed in their cases. The items were then sent to Conservation for removal of the plate packages, at which point the glass was cleaned and any needed repairs to the preservers and hinges were made. After this, the plates were sent to Digital Imaging for photography, then back to Conservation where the packages were reassembled and sealed, then placed back in their cases. Finally, the cases went to Digital Imaging one more time for documentation of their condition after treatment. Plates were once again photographed in cases, and hinge sides of cases were captured again only if a hinge repair had been made.

Coordination between the two units in P&R was essential to minimizing the time during which the plate packages were unsealed. While in general it is assumed that careful removal, handling, and photography of the plates is acceptable, it is difficult to know how sensitive a given daguerreotype, tintype, or ambrotype is. Formulas for the chemicals used to develop and fix the images on the plates varied. Exposure to environmental elements prior to accession of a collection may have promoted various types of decay in the image or its support. [3] For these reasons, work during the time when the plates were outside of their cases was carefully scheduled between Conservation and Digital Imaging.

Photography was done on a copy table with a medium format camera, mounted overhead for all captures except the edges of the photo cases. Two strobes with UV-reducing covers were used, with various modifiers, to light the shots. A 120mm f/4 macro lens was used for overhead shots and an 80mm f/2.8 lens used for shots of the case edges. During initial setup and testing, strobe output was measured with a light meter to establish aperture and light placement for each configuration. A zinc printing plate was used as a stand-in for the photos during testing. For shots of the photo case exteriors, the cases themselves were used during setup and testing, since exposure to light was not an issue.

In overhead shots, the lens was focused from 43 to 86 cm distance from the subject, depending on the size of each piece. All shots were manually focused. Auto focusing did not work well, in part because many of the photos had rather low contrast. It was also difficult to get the auto focus to fix on the area of the scene most desired. A target propped to the height of the plates was used for the

initial focusing and series of shots, in order to reduce the number of shots taken of the plates themselves (the camera used does not have Live View compatibility). Focus was then refined if needed during capture of the collection items. With nineteenth-century photos, this can be complicated by an out-of-focus original resulting from a subject who could not maintain a pose for the duration of a long exposure. In such cases, focusing on defects in the plate or painted decoration applied to the image helped. [Figure 2]

Golden Thread targets were used to verify focus and evaluate tone and white balance. Adjustments were made to camera raw files in Capture One 9.3. The images were processed to TIFF files at true resolution. They were then uploaded to the staging area for OSUL's Digital Collections system, hosted on a Fedora platform and managed by the library's Applications & Development Department, which manages storage, coordination, and delivery of digital content and associated metadata.

During digitization of the exhibit loan pieces, I kept notes on the settings and positions of the camera and lights, and took reference photos of the imaging setups, to be used later in making diagrams. I made note of any special problems that came up and any opportunities to save time in future iterations of the work.



Figure 2. Daguerreotype with blurred subject and sharper plate details.

Results

The result was an after-action review of the project identifying problems and slow points in the workflow, along with strategies and guidelines for digitizing the rest of the collection more efficiently. This was followed by a pilot project to test the improved workflow plan on ten additional pieces from the collection.

Review

The review included a summary of the work done, illustrations of the imaging setups used, and recommendations for improving the workflow. Setup diagrams demonstrate lighting modifications made for the different components of the cased photos. All setups were done on the same copy table. Lighting was designed to present remote researchers with specific details of the pieces and to document the repair and glass cleaning done in Conservation. The

diagrams, shown below and preceded by brief notes, will be used as references when digitizing the full collection, saving time in setting up shots.

Photo case exteriors were lit with flashes modified with zoom reflectors to clearly illuminate the details of their shape and pattern. Metered readings of the light sources indicated the lens aperture should be in the range of $f/14$ to $1/18$; however, I set it to $f/11$, deliberately overexposing the scene because the cases' materials were either black or dark brown, dense, and mostly non-reflective.

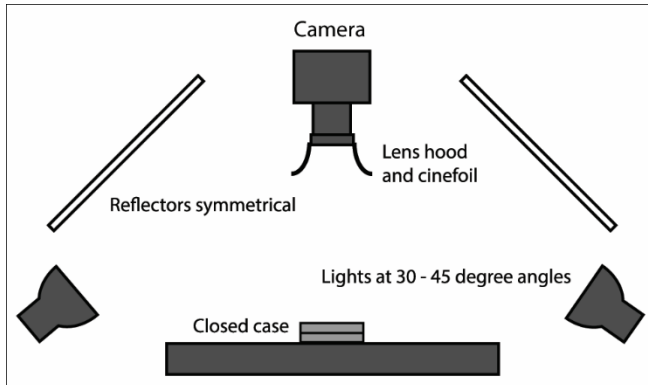


Figure 3. Setup 1: Case exterior, front and back, high relief surface.



Figure 4. High relief case exterior.

Case exteriors with low relief patterns were shot at the same aperture as in Setup 1. Lights and reflectors were repositioned to obtain as much detail as possible.

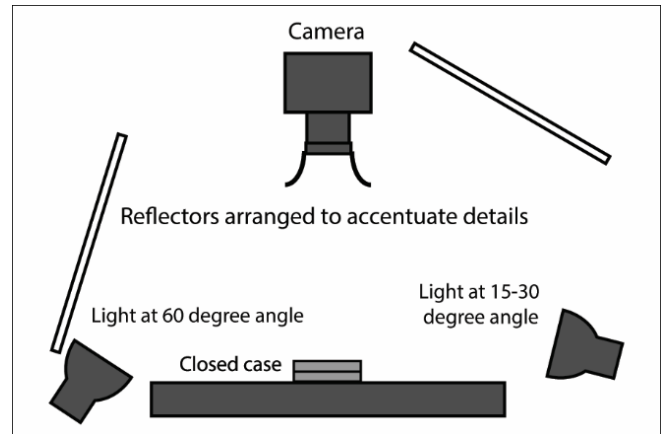


Figure 5. Setup 2: Case exterior, front and back, low relief surface

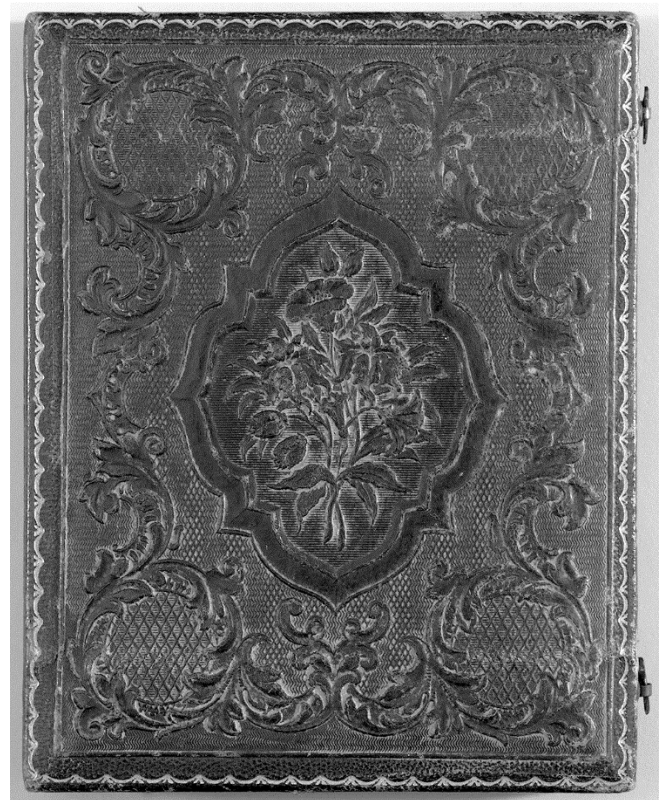


Figure 6. Low relief case exterior.

Hinge and clasp details of the case exteriors were captured at an angle to make the adjoining sides visible. All edges were captured before Conservation treatment. "After" shots were done only for cases that had had hinge repairs.

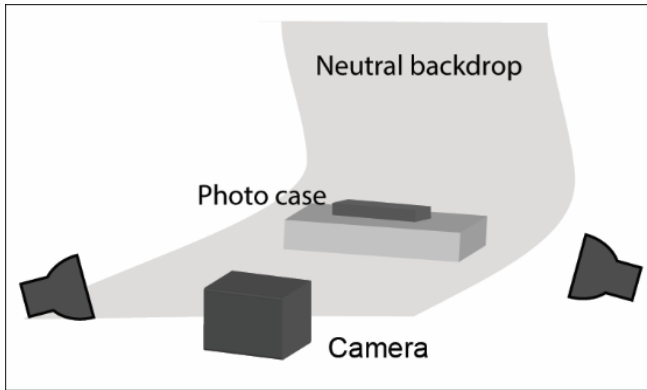


Figure 7. Setup 3: Case exterior, hinge and clasp side.

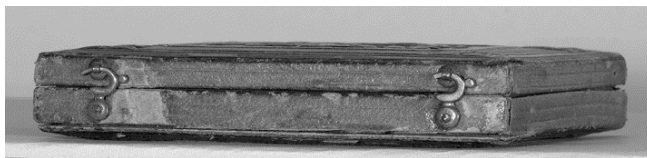


Figure 8. Clasp side of a case.

Plates in opened cases were captured with a setup designed to accent the varied surfaces of the wood, fabric, and metal that make up a photo case while illuminating the plate and blocking reflections. This setup was used twice, in “before” and “after” shots done to document conservation work.

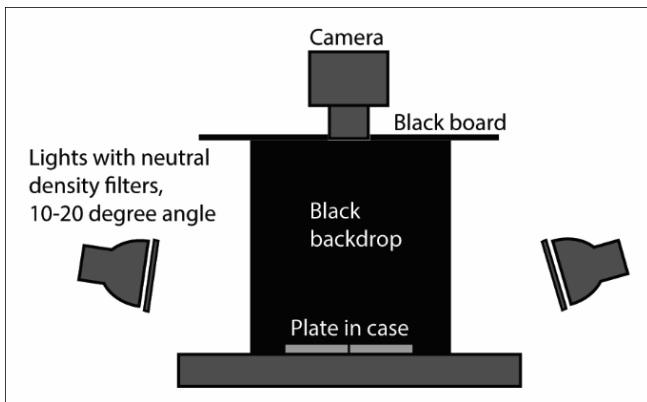


Figure 9. Setup 4: Plate in case.



Figure 10. Photo of plate in case.

Plates outside of their cases had a similar setup, but were lit with soft light reflectors to produce even illumination and avoid specular highlights.

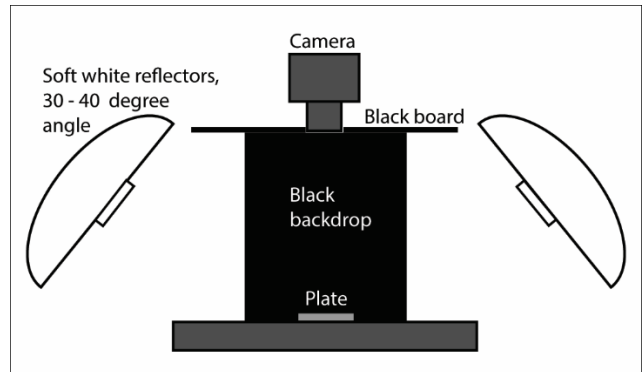


Figure 11. Setup 5: Plate out of case, reflected light.



Figure 12. Plate out of case.

Many cases were lined with paper, often light in color and warped, some printed with the name of the case manufacturer, or written on in pencil. To avoid clipped highlights and shadows which could obscure these details, the empty cases were lit with softboxes on the flash heads to diffuse the light.

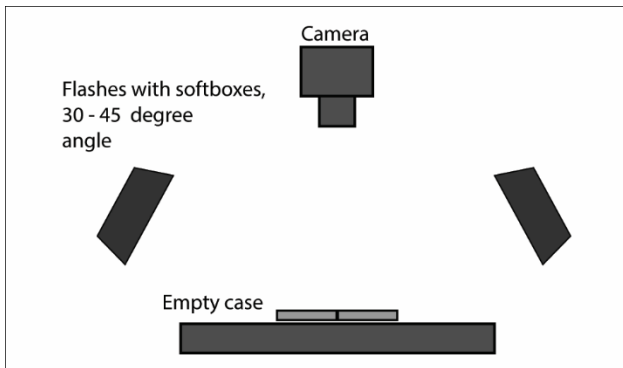


Figure 13. Setup 6: Empty case interior.

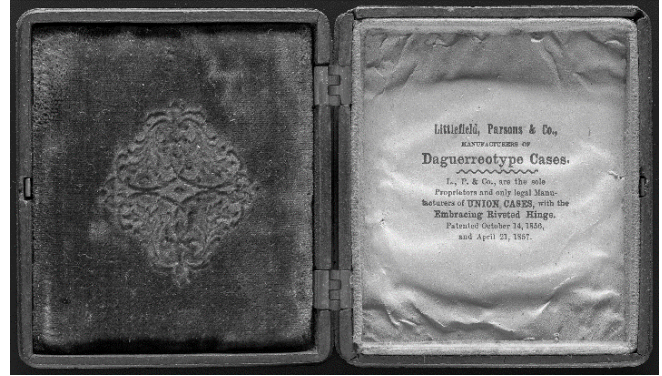


Figure 14. Photo of empty case interior.

Changing lighting setups took time, but was necessary to bring out the physical qualities of each component of the cased photos. Keeping in mind the curator's goal of having digital surrogates which could accurately inform the research of remote users, this practice will be continued when digitizing the rest of the collection.

Opportunities to shorten the time spent with the objects became apparent during this work. They were summarized in the recommendations that made up the second part of the review. The primary request was for an upgrade to a camera with live view capability, which would reduce the amount of time spent focusing. As this would require significant funds, the request will not be filled right away. However, other recommendations were readily adopted. They included a request that the Special Collections staff select items for each shipment according to three factors:

- Group items by type of plate: daguerreotype, tintype, or ambrotype. With surfaces varying in reflectivity, each type of plate in a mixed group requires adjustments to photographic lighting. Grouping items by type avoids these delays.
- Group items by size—1/16, 1/9, 1/6, 1/4, 1/2, or whole plates—eliminating the need to move the camera and refocus.
- Group items by high or low relief decoration on case surfaces, eliminating the need to switch between lighting setups 1 and 2

I expected the first two requests to be easily filled, and the third to be problematic. It seemed unlikely that the depth of decoration on the case exteriors would be recorded along with simpler data like object type or size. As it turned out, depth aligned with case material type—either wood or plastic (high relief), or leather or fabric (low relief)—and these descriptive terms were in fact included in the objects' metadata. Special Collections staff were happy to follow all three requests during the next phase, a pilot project to test the new workflow.

Pilot project

The pilot project involved digitizing a small group of pieces from the collection to determine whether we could save time by using the reference diagrams, and working with items grouped according to the recommendations in the after-action review. The curator sent ten 1/2 plate daguerreotypes in leather cases for testing of the revised workflow.

Digital imaging of the ten pieces was timed using an Access database form with a “clock-in/clock-out” function. The previous work with the 40 cased photos for the exhibit had not been timed in this way; however, projects done with the department’s camera and copy stand are always scheduled in an Outlook calendar. When work is completed, the calendar records are modified to show the actual number of hours spent, if it is different from the number of hours originally scheduled. Though the two methods of timekeeping were somewhat different, they were both accurate enough to use in comparing the pilot with the exhibit-related project. Only time spent on digital capture and editing was used in the comparison; initial testing of setups in the exhibit-related project was excluded. The uncased tintype and cabinet card from that project were also excluded.

Digitizing the 40 cased exhibit items had taken 69 hours, or approximately 17 hours and 15 minutes for ten items. Digitizing the ten items in the pilot project took 13 hours. The 4 hours and 15 minutes saved per ten items, multiplied by another 2,100 items to digitize, will mean considerable time saved in digitizing the rest of the collection.

The Conservation Unit reported four hours spent on disassembling, cleaning, repairing, and resealing the ten cased photos.

Conclusion

Though the measures taken to reduce digitization time were successful, the fact remains that this is not a rapid imaging process. Considering the approximately 2,100 cased photos still to be done, calculating the hours needed to complete the work is sobering.

Digitizing the rest of the collection will require additional planning. As with the exhibit pieces and the subsequent pilot project, this will include close coordination with the Conservation Unit in order to protect the materials. OSUL’s Head of Conservation retired shortly after the pilot project was completed. With the new Head adjusting to the many responsibilities of the position, Conservation will for now limit its work with the cased photos to ten items per

month. Later this year, a proposal to ramp up the number of items digitized per month can be made. Information recorded during the pilot project will help in estimating the amount of time required, and establishing a reliable workflow. Other time-saving measures may include assigning additional staff to assist with photography.

Digitization projects in large public university libraries encounter the problem of working at scale with the impressive collections such institutions can attract, while producing images of sufficient quality to serve the needs of researchers. Balancing quality with efficiency can be difficult, especially as no one wants to compromise on either, yet resources to achieve both aims are limited. Solutions are best found in ongoing dialogue and cooperation among departments involved in creating practices that approach the desired balance.

References

- [1] J. Chen and P. Messier, “Special Characteristics of Daguerreotypes,” training materials for “Photo-Documentation of Daguerreotypes,” Hermitage Photograph Documentation Institute, January 17-19, 2011.
- [2] M. Wachowiak and E. K. Webb, “Updated Methods for Digitization of Daguerreotypes,” MCISmithsonian video, November 26, 2012. <https://www.youtube.com/watch?v=KXVyS6Allh0>
- [3] K. McGarvey, “A Vanishing Past?” Rochester Review, March-April 2013, pp. 42-47.

Author Biography

Amy McCrory is Head of the Digital Imaging Unit in the Preservation & Reformatting Department at the Ohio State University Libraries. She supervises multiple digital imaging projects and workflows, including digitization of rare books, manuscripts, print publications, art, and artifacts from the University’s General Collections, Special Collections, and Archives. She holds a BA in Art from Northwestern University and an MLS from Clark Atlanta University.