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An Enduring Media: Handling and Storage of Glass Plate Negatives

By Lisa Wood, Ohio Historical Society

Glass plates were used as a base for photographic negatives from the 1850s through the 1920s. They were used by both amateur and professional photographers, photographers working in studios, itinerant and industrial photographers, and photographers employed to shoot both babies and mine workers. Given their longevity and widespread use, they are found in many, if not most, archives with photographic collections.

In the Ohio Historical Society archives there are extensive collections of glass plate negatives that were created for varied purposes. There are the glass plate negatives taken by amateur photographer Henry Cooke, son of financier Jay Cooke, while his extended family vacationed at the Cooke’s summer home on Gibraltar Island in Lake Erie. The Cooke family photographs are candid views of upper class Victorian life and common summer activities, such as croquet, boating, and fishing. There are photographic archives of companies engaged in heavy manufacturing, such as the Jeffrey Manufacturing Company, who made mining equipment and industrial chain in Columbus, and the Youngstown Sheet and Tube Company, once one of the largest producers of steel in the world. The detailed images captured on glass plates bring to life the dirt, heat, and danger of laboring in factories and mines. There is a collection of over 5,000 glass plates that represents the career of itinerant portrait photographer Albert J. Ewing from Washington County, Ohio. From about 1896 to 1912, Ewing traveled throughout central West Virginia photographing people in their surroundings and creating a remarkable record of Appalachia. In the collection of the Baker Art Gallery, a prominent Columbus photography studio, there are portraits of entertainers, politicians, and generations of central Ohio residents on glass plate negatives.

These collections are just a few examples of the wide range of Ohioans’ historical experiences preserved on glass plate negatives. The breadth and depth of glass plate negative collections at the Ohio Historical Society can be found in many repositories. This a medium on which an important part of our cultural heritage has been recorded, and, with appropriate and careful handling and storage these visual resources can be preserved and made accessible for generations to come.

Types of Glass Negatives

There are two types of glass negatives, wet collodion and dry plate.

Wet collodion negatives were introduced in the United States around 1855. As the negatives were hand-coated by photographers, they are distinguished by the uneven thickness of the film along the edges of the plates. Silver gelatin dry plate negatives replaced wet collodion negatives in the late 1880s and remained in common use until the 1920s. Dry plate negatives were far more convenient for photographers because they could purchase prepared plates from manufacturers in standard sizes. Determining if plates are wet collodion negatives or dry plate negatives can be useful in dating the images. For the purposes of handling and storage, the two types of glass plate negatives can be managed with the same procedures.

Physical Handling

Like all photographic media, glass plate negatives are susceptible to damage from fingerprints. However, wearing gloves, particularly cotton gloves, to handle glass plates reduces the manual dexterity necessary to handle glass safely. Glass is slippery and old glass can crack without applying a great deal of pressure. Some conservators recommend wearing latex gloves when working with glass plates. Others maintain that washing your hands thoroughly prior to handling glass plate negatives, and frequently during the course of your work, is acceptable. You should always hold the plates with both hands on opposite edges.

Enclosures

Glass plate negatives often come to repositories stored in wooden cases or stacked in the commercial dry plate negative boxes in which photographers purchased them. Neither type of container is acceptable for long-term storage. Glass plates also frequently come to archives in old, acidic envelopes. The plates need to be removed from these envelopes, but frequently there is information describing the images—like dates, locations, and photographers’ names—recorded on them. Archivists typically record this information on the new negative enclosures.

Glass plate negatives must be stored individually in acid-free paper enclosures. Plates that are not enclosed are in (Continued on page 32)
danger of having the emulsion scratched or pulled away from the glass, or of losing portions of the image. The best choice of enclosure for glass plates is a four-flap negative envelope, sometimes called “diapers” by archivists. Four-flap envelopes completely enclose the plates. Putting glass plates in envelopes or folders with open sides leaves the plates vulnerable to slipping out. Flaking and peeling emulsion is a common problem with glass plate negatives. Pulling plates in and out of envelopes or sleeves poses the risk of catching and tugging on an emulsion that is already peeling away from the glass base. Four-flap envelopes can be opened, and plates inspected or removed, without the plates rubbing against the enclosure. This style of envelope can be custom-made or purchased from archival suppliers in standard sizes.

When you are rehousing glass plate negatives, you may find plates that are fused together. This is especially common when plates have been stacked directly on top of one another and stored in humid conditions with fluctuating temperatures. Do not attempt to pry the plates apart by applying pressure. There is a great risk of cracking the plates. Consult a conservator to find out if separating the plates is possible.

**Boxing and Shelving**

It is usually recommended that glass plate negatives stand upright in archival boxes. They should stand on the longest side of the plate to fully distribute the weight of the glass. When plates are stacked horizontally, unnecessary pressure is put on the plates at the bottom of the pile. Plates should not shift or slide in their boxes. If they do not fit the box snugly, the space can be filled with acid-free boards cut the same size as the negatives. For additional support, the plates can also be interleaved with acid-free boards. Plates should be boxed with others of the same size. For example, do not box 4 x 5-inch plates with 5 x 7-inch plates—the smaller plates will not fully support the surface area of the larger plates.

Cracked, chipped, and broken plates are the exception to the rule of storing plates upright. Cracked or chipped plates should be stored horizontally with sheets of acid-free board in between the plates to provide additional support. Plates that are in multiple pieces are best stored in sunken mats that will hold the pieces in place. Boxes that contain broken plates must be labeled on the outside to warn staff that the contents are fragile and the boxes must remain horizontal. Unless plates have shattered into countless pieces, keeping broken plates is worthwhile, because it is still possible to make contact prints from the plates, or scan the plates and preserve the images.

Another exception to the rule of storing glass plate negatives upright are mammoth plates. The *Thesaurus for Graphic Materials* defines mammoth plates as “Large photographs taken during the second half of the 1800s; various sizes, including 18 x 22 inches and 20 x 24 inches. Includes both the wet collodion negatives and the prints made from them.” These plates are rare compared to standard 4 x 5-inch, 5 x 7-inch and 8 x 10-inch plates. While there are thousands of smaller glass plates at the Ohio Historical Society, there are just a few dozen mammoth plates. To fully support the entire surface area of plates this size, flat storage is the best option. It would be ideal for a conservator to construct custom enclosures and boxes for mammoth plates. If that is not possible, flat storage in drawers or boxes with adequate padding to keep the plates from shifting should protect them.

Glass plate negatives are heavy! Do not overfill boxes with glass plate negatives. It is much better to house a glass plate collection in a number of small boxes than to fill a cubic foot box with glass plates. Never put glass plate negatives in boxes that are not in good condition. The weight of glass plates could easily cause the bottom to fall out of a box that is not sturdy. Archival suppliers make boxes designed specifically for glass plate storage. Creating box labels that say something similar to “Glass Plates—Handle Carefully” is a good way to alert staff that they are about to pick up a box that contains weighty and fragile material.

It is not recommended that boxes of glass plate negatives be stored on mobile shelving. The motion of the shelves can cause the plates to shift in their boxes and increases the risk of breakage. Additionally, the height of the shelves on which boxes holding glass plates are placed should be considered. It may be awkward for staff to lift heavy boxes from the top or bottom shelves. Boxes containing glass plate negatives should never be stacked on or under other boxes.

**Providing Access**

It is best to minimize the need for physical handling of glass plate negatives. For many years, making contact prints on fiber-based archival photo paper was the standard method for providing access to glass plate negative collections. Maintaining the equipment and purchasing the supplies for traditional contact printing has become difficult and expensive in the age of digital photography. Fortunately, glass plate negatives have proven to be a
medium that is well-suited for scanning. The tonal range and incredible detail that glass plate negatives are noted for can be captured in high resolution tiff files. Be sure the scanner bed is clean and will fully support the surface area of the negatives. Always place negatives on the scanner bed emulsion side up. Once glass plate negatives are scanned, they can be printed or made available on-line, and the original plates returned to storage.

**Conclusion**

Even in less than ideal enclosures and storage conditions, thousands of glass plate negatives have remained intact for decades. With careful handling, consistent storage procedures, and employing common sense, archivists can ensure that they survive for many more.

**References**


