"Preserving Photographs in a Digital World" Seminar
George Eastman House International Museum
of Photography and Film
and
Image Permanence Institute, Rochester Institute of Technology

Amigos Fellowship Final Report
March 2004

Submitted by

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AMIGOS PRESENTATION
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Overview

From August 18-23, 2001, I attended the seminar "Preserving Photographs in a Digital World" sponsored by the George Eastman House International Museum of Photography and Film and the Image Permanence Institute, Rochester Institute of Technology, at the George Eastman House in Rochester, New York. Topics discussed in the course included:

1. History & technology of photographic materials
2. Color processes: traditional and digital
3. Chemistry of deterioration
4. Introduction to digital imaging
5. Preservation planning for photographic collections
6. Glass-plate and film-negative preservation
7. Practical realities of a digital imaging project
8. Application of digital imaging in collection management
9. Scanning photographs
10. Organization of digital collections: databases and indexing issues

Forty-five people were enrolled from throughout the United States, Canada, South Africa, Norway, Switzerland, and New Zealand, with varying backgrounds and experience in photo preservation and digitization. The class was intense and the materials were covered with great skill and knowledge. Although the days were long and the work intensive, the opportunity to discuss common problems, opportunities, and solutions was exhilarating.

Background

As the head of the South Texas Archives and Special Collections at Texas A&M University-Kingsville, I am responsible for a growing collection of archival materials, including a multitude of photographs and negatives, some dating to the nineteenth century, many from the early twentieth century, and an increasing number from the late twentieth century. Examples of Daguerreotype, Ambertype, Tintype, glass negatives, nitrate negatives, albumen, cyanotype, and stereographs can be found in the collection. The collection includes materials primarily from rural, agricultural South Texas and Northern Mexico. The photographic collection is becoming increasingly important because the Hispanic population is now the largest minority group in the United States and the Mexican group is the largest group within the Hispanic division. The population of South Texas is dominated by the Mexican-American minority group. The photographs in this archive document the growth of ranching, the development of railroads, the turmoil brought into the area by the Mexican Revolution, and the growth of small planned communities into larger more chaotic cities.

Because of the increased use of the photographic collection, it became apparent there was a need to reorganize and provide better access and descriptions of the photo collection. Digital imaging of the photographic collection appeared to be a method of access that should be investigated. Better descriptions of the images and a more organized database were clearly a need. A plan for the preservation of photos and negatives was a definite necessity. A study to determine if the digital image could be preserved, and if so, how could it be done at a reasonable cost needed to be undertaken.

Prior to attending the Eastman School Seminar, the photographic collection was in most part filed in file folders, in a vertical file. Some photos had negatives, and some negatives had prints of the photographs. Some photos were filed with the collection of the donor in archival boxes and some were placed separately in a "Photo File." A database had been created in FileMaker Pro but descriptions did not include types or characteristics of the photographs. The entries did include identification of people and places in as much as they were known. The need for systematizing the filing procedure and instructions for correctly housing the different types of photos was the top priority in attending the seminar.

The Photographic Preservation Plan

From the lectures delivered at the Eastman House it was learned that the first step in preparing a Preservation Plan was always a survey to determine needs and assess the contents of the collection. Thus a survey was undertaken immediately.

The Survey

In a survey of the types of photographs in our collections, it was determined that the most common types found in our collections were:

1. Sepia Platinum – these are prints that are generally gray-black or bluish-black in color, although some are brown. Although there is generally little fading in these photos, the paper does tend to yellow and become embrittled, so they should not be exhibited.

2. Daguerreotypes - these photos are fractional sizes of the whole plate that is approximately 6.5 x 8.5 inches. The most common formats were the 1/6 and 1.4 plate studio portraits. Virtually every Daguerreotype made in the U.S. was encased in a wooden frame with thin leather covering. With time the encasements became more elaborate so that the photo can often be dated by the case. They can be identified generally by their highly reflective mirror-like surface. Light reflected from different angles will make the image alternate from a positive to a negative. The image color tends to be neutral. Applied color was common, mostly highlighting facial features or jewelry, but sometimes the entire photo was tinted. Deterioration is generally noticed in that spots and abrasions mar the delicate and thin surface layer of silver. Because of glass deterioration, the image might appear cloudy.

3. Ambrotype - these photos have neutral blacks, creamy highlights, and surfaces not reflective like the Daguerreotype. The image does not shift from positive to negative, but otherwise are similar to Daguerreotypes. Because the image was carried on a glass support it is very susceptible to breakage if removed from the protection of its case. It is most prone to glass deterioration. The necessary black background gave the image depth, but was painted on the glass, so the paint flakes off leaving areas of the glass clear.

4. Tintype - these photos are in a similar category with the Daguerreotype and Ambrotype, using the wet plate collodion process, but the collodion binder is flowed on a thin iron support instead of glass. The iron sheet was precoated with a black or brown colored lacquer and thus the image can appear as black and creamy white or chocolate colored. Most Tintypes were coated with a layer of varnish that protected the collodion layer. The lacquer often appears yellowed or cracked. These photos tended to be spontaneous street portraits, rather than studio portraits as were the Daguerreotypes and Ambrotypes. The most common damage is physical, due to improper handling. There can also be flaking and oxidation.

5. Albumen prints – generally found in our cartes de visite and cabinet cards, of which this Archive has many, and can be identified generally by highlights of yellow with red-brown, purple or yellow-brown hues. Paper fibers are visible. The prints are generally encased in a paper frame. They tend to fade quickly as they were a product of "mass production."

6. Photographic prints from the early twentieth century through today – not categorized in the same way as the above, they continue to have deterioration problems, including massive fading when color is first introduced.

7. Digital photographs – there are few standards for the born digital photograph. Quality in content and composition is dependent on the person producing a hard copy. It is not considered a preservation medium and is difficult to preserve. It should be used for access, not preservation.

8. If possible, a negative should be made immediately and stored properly.

9. Slides and Glass negatives – the collections include both slides and glass negatives. The information given in the seminar was primarily about housing them in an appropriate manner and methods of identification. The collections include both slides and glass negatives. The information given in the seminar was primarily about housing them in an appropriate manner and methods of identification. The glass negatives are limited in number and the slides are scarcely used. Therefore, other than producing appropriate identification in the finder's guide and providing appropriate housing, there is little attempt to deal with them.

Processing

Following the survey to determine the types of photographic images in the collections, it was determined that each photographic collection that came to the Archives would be handled with the care learned at the seminar, and that an attempt would be earnestly made to reprocess the photos already in the Archives. The following steps would be taken:

1. Photos would be given individual accession numbers, based on our numbering system, and prepared for placement in the "Photo File" cabinets, filed vertically.
2. Each photo would be cleaned, and truly historic photos would be re-photographed so a negative could be filed in an appropriate way.
3. The negative would be placed in archival polyester and then in a negative envelope and placed in a vertical file. The accession number used on the negative would be the same as the one on the photograph itself.
4. The photographic image would be placed in archival polyester, supported by an acid-free binder board and placed in a vertical file.
5. Additional support would be offered the photo file drawers by placing support binders throughout the drawer.
6. The Finder's Guide gives full identification information about each photo, including type (Ambertype, Tintype, digital, etc.), and, if possible, names of people, places, and dates. This information would be entered into a database. To date only about 100 entries have thumbnail photos attached. Either individually or as a group, all have database entries.
7. As the photos are re-photographed, prints would be made and placed in binders, filed topically for use by researchers who might know they need a photograph but need to browse to determine which photograph they want to use. This browsing method reduces the need to handle the photographs and/or negatives with white gloves. White gloves are used when the photo being used is not encased in archival polyester.

Storage

1. Photos would be placed in archival polyester and acid-free storage folders. Each photo and file folder supported with archival binder board.
2. Folders would be placed in numerical order in a vertical file cabinet.
3. Oversized photos would be placed in archival polyester and large acid-free folders and stored in flat file. Blue prints would be placed in unbuffered folders.
4. The room would be monitored to maintain a temperature of no higher than 60 degrees with a relative humidity of between 30% to 40%.
5. The room would be kept dark unless in use.

The Seminar Content

The plan for the preservation of photographic material was largely based on information gained from the lectures and discussions at the Eastman Seminar. Grant Romer, of the George Eastman House staff, presented lectures on the history and technology of photographic materials that instructed us on how to identify historic photos. Doug Nishimura, also from the staff at the Eastman House, discussed the techniques and processes that would help us preserve the negatives and photographic images. At least two days were devoted to lectures and workshops on the identification and preservation of photographic collections. Insights provided at these sessions included:

1. Photographs need support. They can be filed in flat containers, boxes, or flat files, or vertically in file cabinets, but they must be provided support.
2. The photographic collection needs a stable, cool, low humidity, dark environment. The collection should be in a room with a temperature no higher than 64 degrees and relative humidity no higher than 30% to 40%.
3. Source and reasons for deterioration include not only the environment in which they are kept, but also the materials and composition of the photo paper and processing method.
4. Film types that need special consideration in preservation are:

    a. Nitrate film, which is often combustible and generally found in all 35-mm film before 1951, is likely to nitrate. Sheet film until the mid-1920s is often nitrate. Amateur roll film produced between 1890-1938 is mostly nitrate. There is no nitrate film after 1951. It is generally identified by the date in which it was produced. There are other tests that can be used. It generally turns yellow or amber color as it deteriorates. Sheet film tends to adhere to other film. Decaying nitrate film has a “sickly sweet” smell.
    b. Acetate film deteriorates, but is not combustible. It can be found between 1848 and 1951, but after 1951 the film is generally all acetate. All 8-mm and 16-mm film is acetate. Acetate sheet film was introduced in the 1920s and became quickly common after that time. It is generally identified simply by the date of the film. It is hard to distinguish from polyester film. Deterioration is generally quickly determined by the smell of vinegar.
    c. Polyester film was introduced in the 1950s and is the accepted film in all types today. It cannot be easily torn, nor is it prone to decay. This is considered the preservation medium and is the type of film that can be found in most historic collections. Deterioration of this film has not yet been determined.
5. Photographs should have negatives because negatives are considered the preservation medium. If the original negative is what is given to the archives, then duplicate negatives should be made.
6. Handling of photographs should be limited as much as possible. Copies should be made available for use.
7. Film should be stored in frost-free refrigerators or cold storage vaults.

Digital Imaging

The lectures on digital technology and preservation were delivered by Steve Chapman, Harvard University; Steve Puglia, National Archives; and a panel of noted experts. From the presentation, the following information were highlights of significance and importance to me in my planning for the South Texas Archives & Special Collections' photo collections.

1. Digital preservation is designed to prevent obsolescence and to maintain data integrity. Digital images are not preserved unless they are stored in a digital repository. The digital repository provides for preservation, storage, and access. Its most significant task is to keep materials current.
2. All digital materials should have backups.
3. Media replacement must be continuous and data migrated on a regular schedule. In general, operating systems change every 18 months and after three (3) years, materials must be migrated to be read. Metadata is currently the method used to access materials when operating systems change or are updated.
4. Digital imaging is more an access medium than a preservation medium because of the tremendous cost in first-time production and migration.
5. The cost of digital imaging is currently so high that it is a critical issue. The fragility of the medium is also a problem.
6. Plans for digitizing should include the use of standard formats (file format, color space, compression scheme, etc.). If the plans are carefully made, they should reduce the frequency of migration. The functions of a digital repository are:
    a. To preserve files
    b. To preserve the ability to identify and retrieve the files, then make them available to authorized users
    c. To preserve the ability to render the files (obligation varies according to the designated community)
7. To build a repository requires:
    a. Equipment
    b. Education
    c. An understanding that a great deal of what is done will be developed by the people building/managing the repository
    d. An ability to develop metadata using developing standards

After listening to the lectures, I determined that due to budget and staff limitations preservation of digital images is almost beyond what can be done by a small to medium sized archive. To preserve the digital image requires continuous migration as technology progresses. Migration is as costly as producing the original material. Born-digital images should be re-photographed and stored as are more traditional images. Digital imaging is a method of access for most small to medium sized archives, not a method of preservation. With this background, I determined that a database with complete descriptions of the photograph is the most feasible method of access for the South Texas Archives. While I continue to work at producing a FileMaker Pro database that includes thumbnail photos of the collections, it is a project that is being developed slowly as time and staff permits. The FileMaker Pro database does have information about every photo that has been accessioned since attendance at this seminar.

Accomplishments and Implementation

Following attendance at this seminar, we have implemented the following program for photographic care at the South Texas Archives & Special Collections:

1. All photos are processed and cared for as indicated above as they arrive.
2. About half the photos acquired previous to my attendance at this seminar have been rehoused in compliance with the new method.
3. One student worker who has photography experience and expertise is re-photographing photos. Under my supervision, we are identifying the types of photos in the collections and including that information on finder's guides and database entries.
4. Photos are being relocated to a photo storage room so that all photos are housed together.
5. The photo storage room temperature is now at the recommended coolness, humidity, and light limits.
6. I am researching further to finalize my "Photo Preservation Plan." I feel that I need to compare it to other plans and will do so as time permits.

Conclusion

The seminar was a worthwhile and rewarding experience. The speakers were, on the whole, outstanding, organized, and knowledgeable. Their offer to continue to assist us as they could was worth a tremendous amount. It is comforting to now know that if I need assistance I may call the Eastman House and, as an ongoing benefit of my participation in this Seminar, receive free expert advice. I learned a tremendous amount and have been able to use the information that was given me.