



Digitizing Photographic Images as a Preservation Tool by Eric Mortenson

Inexpensive scanners and computer workstations are now in use at most small libraries and historical societies, and staff and patrons are attracted by the capabilities of digitization of photographs. In this article I will discuss digitization as a preservation tool.

First, a general comment: Scanning photographic images for the purpose of preservation needs to be

considered in relation to the goals and objectives of the individual's or institution's collection. The labor and costs involved in creating an electronic collection can often be better spent on re-

you should upgrade your computer and scanning equipment, you will also need new software for "migrating" the digital files to the newer mediums, for reading them, and for transferring files to different stations on a network. This is because at this time, downloading a file is limited to the capability of the current computer system for viewing (i.e., the maximum resolution of a computer screen is 72 dpi) and for file transfer over a network.

Perhaps the most important consideration is that the resolution or information within, for example, a 300 dpi, 24.5 MB file of an 8" x 10" print is approximately one-tenth of the information that is in the original image. Admittedly, the definition of "information captured" used here may become outmoded at some future date, but in the meantime, anyone considering digitization will have to be willing to accept the loss of possibly valuable information and/or detail contained within an image.

For example, in a photo album of landscapes, automobiles and buildings, there were no indications of the date on which the photographs were made. Upon closer examination of the license plate of the car in the photograph to the left, we saw the yearly license tab that enabled us to date the image to the year rather than to the era. Even in the highest quality digitized image, this information would have been lost. (See the photograph and insert below.)

In practice, after a researcher has chosen an image for use, he or she has to find out which kind of file transfer or hard copy output will be needed. For most purposes the digital image is adequate for research, for it is comparable to a high quality photocopy. But for reproduction in a publication, the color



MHS collections: photograph by Norton & Peel



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Above: This print was made from a 4" x 5" negative of an 8" x 10" black and white print, scanned at 200 dpi.

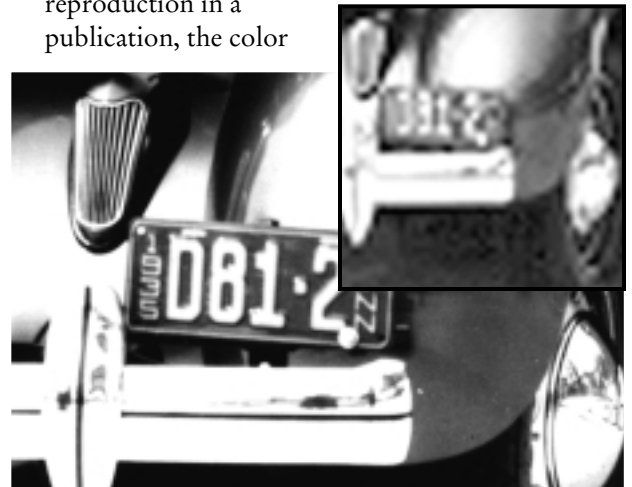
Right: This is a digitized image from a 35 mm slide, scanned at 200 dpi.

Far right: A blowup made from a 4" x 5" negative of the top photo, scanned here at 200 dpi

Insert: a blowup from the digitized slide image., also scanned at 200 dpi.

housing and cataloging images you already have. In other words, do not be lured into false expectations about creating an accessible collection. We may assume that once the computer file is created there will be less handling of the original, but the reality is more often an increased demand for the original.

Next, caution is in order. Scanning an 8" x 10" image can require a considerable amount of computer storage space. For example, the top picture above, scanned at 200 dpi (dots, or pixels, per inch) creates a file of just under 1 megabyte (MB); at 300 dpi—2.2 MB; at 600 dpi—8.6 MB; at 800 dpi—15.4 MB; etc. If



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and resolution is far greater when a 35mm color slide is made from the original image. (It is also worth pointing out that, while handling several digitized images in files of this size, e.g. 15.4 MB, is possible, the computer storage ramifications of dealing with 1,000 to 10,000 digital images could be very costly.)

Duplicating 35mm slides is becoming a more efficient option with the accelerated rate of scanner improvements and the push towards chemical-free image-setting technologies. The 35mm color slide can still be re-scanned and the copy, rather than the original, used to meet current demands. By relying on the higher-quality 35mm slide rather than the high-resolution file, the original image does not need to be rescanned whenever hardware is upgraded, nor does one have to be concerned with using electronic formats that may become obsolete in a few years.

Access

Databases need cross-referenced information to be useful. Because of the way a database functions, information that cannot be cross-referenced will not allow for a complete search or query. Before a database can be designed or developed, the collection must be cataloged and indexed. Unfortunately, off-the-shelf databases that are designed to handle the complexities of historical collections are not yet available. Since the selling point in promoting the idea of digitizing collections is being able to search your collection electronically, it seems to me that at this time, resources would be better used if focused on the priorities of preserving the original.

During the cataloging process, many things can be done simultaneously. A 35mm slide can be made and the original can be re-housed. The added step of scanning a slide at this time would be much more efficient in this format. The labor and equipment costs to deal with just one format, rather than originals of various formats, will easily outweigh the cost of creating the slide. Use of the 35mm slide will provide a consistent format for digitization and access. Therefore, when the researcher's final choice is made, the color slide could easily be duplicated or loaned for reproduction. Ideally, any photo reproduction should be made in a 4" x 5" format, but for comparison and practicality the 35mm slide is most useful.

Reproducing Original Images

To create quality reproductions of originals, you will probably need an experienced and qualified photographer. There are a few criteria to keep in mind when choosing a photographer.

- Will the photographer provide examples or references for the same type of work?
- Does the photographer's format work for your collection?
- Will the photographer turn over all films produced from the project?
- Is the photographer aware of the fragile nature of collection materials?
- Can the photographer produce color-matching film (i.e., color-corrected slides)?
- Will the photographer work on location or from his or her own facilities?

Before hiring a photographer, consider also whether a specific film format is important for your purposes. For example: Does it matter if the copies are in a 35mm slide format, or do you need 4" x 5" negatives and transparencies? The standard format at MHS is a 4" x 5" black-and-white copy negative and an 8" x 10" black-and-white file print. For works of art we make color slides and 4" x 5" transparencies.

The capabilities and experience of the individual are not as important as his or her interest in producing a technically accurate reproduction of the original item. Often you can find an individual who may not be employed professionally as a photographer, but who has the necessary skills and attitude for photographic copy work. One place to start is with your local newspaper or portrait studios. These photographers will have access to studio and dark-room facilities, but they may charge more for their services. You may also want to consider purchasing the equipment and training your own employee to do this work.

Recommended Readings

- “Can Your Images Stand the Test of Time?” John Stewart. *Imaging Magazine*, May 1998
- “Resolution ABCs”, *PC Photo*, March/April 1998, Vol. 2, No. 2.
- “The Right Chemistry,” *Digital Imaging*, September/October, 1995. (Discusses the pace of advances in digital imaging.)

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