



# Collection development for digital photographs

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## Abstract

**Purpose** – The purpose of this paper is to discuss the challenges involved in collecting and managing digital photographs and provide advice for librarians in appraising, formulating collection development policies, and negotiating gifts of digital photographs.

**Design/methodology/approach** – The ideas in the article are based on author's work with digital photographs at Washington State University and research for a workshop taught through the OCLC Western office on digital photograph collections including long term preservation and management.

**Findings** – By careful appraisal of digital photographs including the consideration of image format, descriptive and technical metadata, and the development of collection development policies, library professionals will ensure that they develop viable collections of digital photographs.

**Practical implications** – The paper is a very commonsense guide for librarians and visual image curators who are charged to manage and develop collections of digital photographs.

**Originality/value** – Though there is a vast literature relating to creating in-house library digital collections, issues relating to digital photograph collection development are not yet available in the professional literature.

**Keywords** Photographs, Collections management

**Paper type** Technical paper

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On 13 January 2004, Eastman Kodak announced that it would stop selling tradition film cameras in North America, Canada, and Western Europe and instead focus on digital photography (Reuters, 2004). Kodak's business move singled the current reality that film cameras will soon be (if they are not already) an obsolete technology. As amateur and professional photographers move to shooting digital, archivists and librarians entrusted with developing visual collections in repositories around the world are facing an unprecedented challenge. With the demise of traditional film cameras in favor of digital versions, time tested procedures for collection development and management must be radically altered. Many institutions with large visual collections have often assembled some collections according to their physical format, e.g. postcard collections. However, the variety of physical formats is no longer relevant in the digital era. Images derived from digital cameras share many of the same basic challenges with all electronic data, but also present special obstacles. Not only is the medium of digital photographs inherently unstable, but of greater concern is the rapidly changing hardware and software necessary for the retrieval and interpretation of that digital information. Rosenzweig in his *American Historical Review* forum article notes that Microsoft only supports its software for roughly five years (Rosenzweig, 2003). This article therefore seeks to address the following questions. What are some of the key challenges of working with digital images? How does one begin to appraise and collect digital photographs? What considerations should one make in formulating new collection development policies and procedures?

Unlike traditional analog visual media, such as stereo cards which are inherently stable, digital images will rapidly become unreadable if appropriate steps are not taken to preserve them. Many archives already have unreadable digital files on obsolete hardware. At Washington State University, the papers of Thomas Foley, former House Majority Leader, contain eight inch floppy disks and other electronic media that are no



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longer readable. This basic instability of digital media is a direct challenge to the notion to a common means of acquiring historical records sometimes referred to as “preservation through neglect”, that is historical items stashed away in attics and basements until decades or even centuries later they are donated to an archive (Rosenzweig, 2003). In the current electronic environment there is roughly a five year window to attend to digital photographs before they are unusable. Another concern is image quality. Early digital cameras had limited mega-pixel counts and currently mobile phones and BlackBerry devices that take pictures produce poor quality images. Image quality is a concern, especially if a repository wishes to make prints for patrons or otherwise publish the photographs.

An even more pressing concern is the current trend for digital photographers to shoot images in the RAW file format. RAW files are proprietary formats that are unique to each camera producer. RAW files maintain all of the data collected by the camera without any interpolation. As RAW files preserve the maximum amount of data recorded by the camera, they provide tremendous opportunities for editing. Among the cited benefits of RAW files is that they provide greater image quality over time and are an archival image format (PhotoshopNews.com, 2006). The latter statement is heavily ironic in that RAW files are far from being a stable format. The crux of the problem is that there are scores of different RAW formats and each camera producer has special, encrypted (closed) software that is required to open its RAW files. If this problem were not bad enough for long-term preservation, many camera makers are not supporting their earlier RAW formats so photographers who shoot RAW are already confronted with the challenge of opening images that were only taken a few years ago. Entire brands are threatened with obsolescence. One entire brand of RAW formats, Contax, has already disappeared (OpenRAW, 2006).

The photography community is well aware of the RAW crisis and has started an organization titled OpenRAW to encourage camera makers to open up and standardize RAW formats so that they will be more accessible. In January 2006, the OpenRAW initiative conducted a survey on their website with 90 per cent of some 19,207 respondents agreeing with the statement:

Once a digital image is written to a file by a camera, data in all parts of the image file should belong to the photographer who captured the image. Camera makers should publish full and open descriptions of all parts of the raw image files their camera produce (OpenRaw, 2006).

Adobe the company that produces Photoshop software has developed a script that it calls the DNG or digital negative that will convert RAW files from 15 camera makers into DNG which is an open standard (Adobe Photoshop, 2006). Adobe’s motivation is no doubt to promote the use of Photoshop, but by devoting its research and development resources toward the RAW problem, Adobe has created an open standard that provides the editing benefits of RAW files across camera makers.

### **Appraising digital photographs**

One definition of appraisal as relating to archives is:

... the process of analyzing and selecting records in order to determine which are suitable for retention as archives. No materials should be accepted by an archives service except as a result of appraisal (Prytherch, 2000).

In appraising digital photographs, librarians will want to consider both technical and aesthetic elements. The key technical aspects are image format, resolution, and

technical metadata. Image format breaks down into proprietary and closed formats, such as RAW, and non-proprietary formats, such as JPEG (Joint Photographic Experts Group), although TIFF (Tagged Image File Format) files are a proprietary format the standard is open and very widely used. If confronted with a donation of RAW files ask for non-proprietary or open formats, such as JPEG or TIFF, or convert RAW files, if possible, through Adobe's DNG. There are several good reasons for this course of action. First off, if your institution begins collecting in RAW formats you will need to keep multiple versions of proprietary software to work with your RAW images. Secondly, as RAW files contain the maximum amount of data captured by the camera the moment the image was taken, they are large files. What would be a 0.5 MB JPEG image is a 12 MB RAW file. The difference in file size might be negligible for a small number of images, but a gift of say 10,000 RAW images would be a strain on any systems department. The final issue to keep in mind is that for long-term preservation the fewer differing types of formats supported, the easier it is to ensure that the files are properly maintained (Anderson, 2005).

To determine a digital photograph's resolution and what technical metadata is readily available, open the file in Photoshop or imaging software such as Microsoft Office Picture Manager or Apple's iPhoto and look at its properties. In a Windows environment, right click on the image. In Figure 1, a group of donated images that was sent to the author on a 3.5" floppy disk is opened using Microsoft Office Picture Manager. The author right clicked on the highlighted image in the upper right and a

These images were sent on a floppy disk in an internal campus mail envelop to the author. Opening the images in Microsoft Office Picture Manager and right-clicking on an image will show its properties.

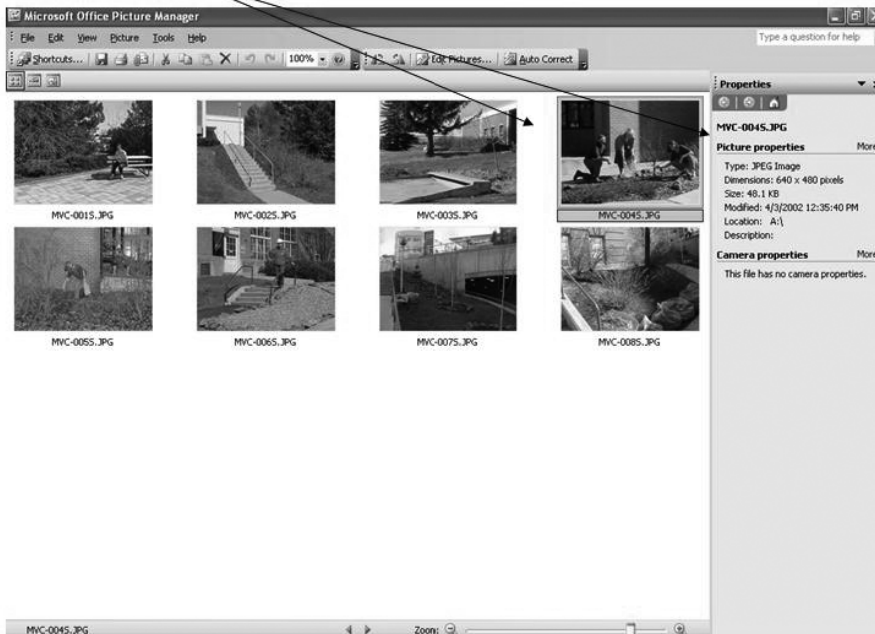
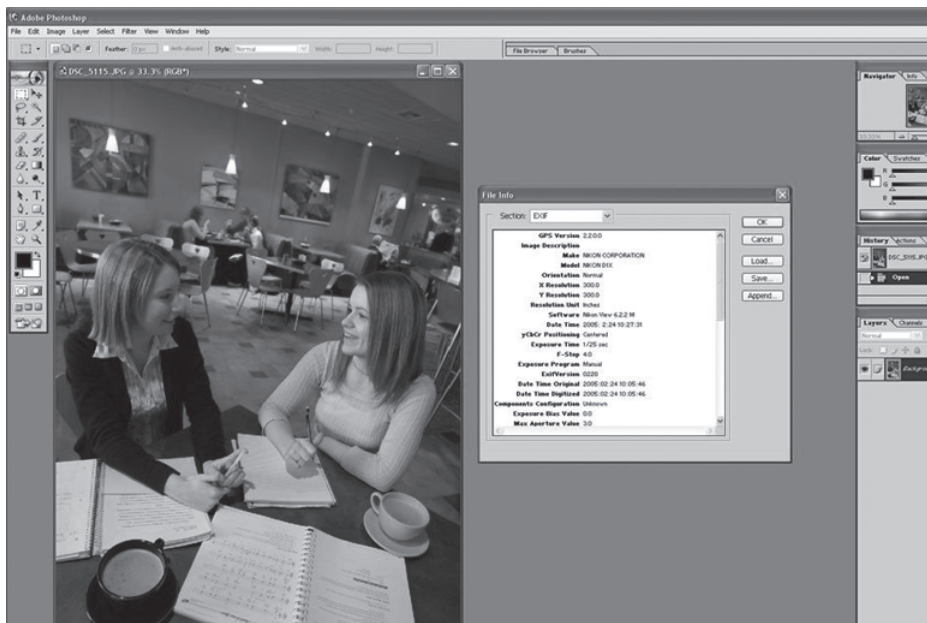


Figure 1.  
Appraising digital  
photographs

box opened giving the pixel length and width of the image as well as the last date the image was modified. One way to determine the resolution of the image from its pixel dimensions is to visit [scantips.com](http://www.scantips.com) ([www.scantips.com/calc.html](http://www.scantips.com/calc.html)). On the site is a calculator that will translate the height and width in pixels to resolution. Using the example of the image in figure one with pixel dimensions of 640 by 480, the resolution is 60 dots per inch (dpi). Decent printing quality is 300 dpi so this example is a very low-resolution image. The information on the date last modified can be extremely useful if it is correct. It is difficult to determine the accuracy of the information after the fact, but if the opportunity to speak to the photographer is offered, it is possible to settle the matter with a few basic questions such as, is the date time feature of your camera set correctly? Did you edit/modify the files after taking them? These answers will help you accurately date the images.

Beyond basic image properties, many cameras also provide EXIF (Exchangeable Image File Format) metadata that is usually embedded in JPEG files. Figure 2 shows the extent of EXIF technical metadata. One key thing to keep in mind whenever appraising digital photographs, is that you never want to do anything to change a digital photograph, and then resave it. Resaving a JPEG image will dramatically reduce its quality. Any modifications that you wish to make should be saved as a copy of the original file. Other basic file management techniques include, keeping the files in one place and on a backed-up server. Never rely solely on external media, such as CDs, for storing digital photographs. If you do store copies of images on CDs, burn multiple copies and do not write directly on the top of the CD, ink from pens can corrupt the files on the disk.



**Figure 2.**  
EXIF metadata as viewed  
in Adobe Photoshop

**Notes:** If the photographer's camera settings are accurate, EXIF information provides detailed technical metadata that is extremely useful in processing and managing digital photographs

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Another aspect of appraising digital photographs is on aesthetic and content grounds. Are the images out-of-focus? Are the light levels off? Is the image poorly framed? The answers to these questions might be a consideration in rejecting some (or all) photographs. The other key question is if the photographs fit in with your collection development policy for images. Do the photographs relate and/or enhance existing collections. Do the photographs relate to a new program or area that the institution has as a goal? Do the photographs have intrinsic and/or long-term historical value?

Appraising digital photographs is and will continue to be a daunting task. Unlike the costs associated with purchasing and processing film which limited the volume of images produced, with digital cameras it is possible to save thousands of images. This does not, however, compel libraries and archives to accept everything offered.

### **Policies**

One might raise the question, why bother with another policy statement for digital photographs? The short answer is that a collection development policy statement (or the revision of an existing image collection development policy) can serve as a thoughtful reflection of the present and future aspirations of a repository so that when a gift is offered it is weighed against that document, rather than making a hasty decision impulsively. A clear collection development policy is also a very gentle way to say “no thanks” to an inappropriate gift without hurting the donor’s feelings. It also lays the groundwork for future collection development. Unfortunately, few readily available written policies deal specifically with digital photographs. One the very few exceptions is that of the National Archives and Records Administration (NARA, 2006). This policy is especially instructive on what NARA refuses to accept. NARA will not accept low quality (defined as less than two mega-pixels) digital photographs, digital images that are embedded in other applications, such as CAD or PowerPoint, and aerial and satellite data.

According to NARA’s policy for digital photographs, before government agencies may transfer digital photographs to NARA, the files must meet minimum quality standards, and have descriptive and technical metadata. The minimum quality standards for color digital photographs are 8 or 16-bit color RGB files captured on a digital camera at 6 mega pixels or greater. Agencies transferring digital photographs to NARA must also provide descriptive metadata including a documented unique identification number, a caption, the name of the photographer, and copyright information. The technical metadata requirements are file format, bit depth, image size, and EXIF information. The digital photographs that meet NARA’s criteria are transferred to NARA’s electronic archives located in Bethesda, Maryland.

### **Suggested elements to include in a digital photographs collection development policy**

A statement on your institution’s existing and perhaps future geographic focus is vital; mention of the connection between the visual collections and how these resources support the overall mission of your organization, such as teaching and research and the purpose and subject strengths the image collection(s). Note any existing agreements or policies that are in place which will influence the selection of materials. Possible consideration of the content of the photographs, such as, those that have “long-term historical value” may be taken into account.

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Key to any collection development policy is the requirement that any gifts must be accompanied with a signed deed of gift. The deed of gift should explicitly state the transfer of intellectual rights which will allow the host repository to disseminate and reproduce the donated images. The digital photographs should be transferred (or converted) into non-proprietary formats, such as JPEG, or open standards such as Adobe's DNG or TIFF. Your repository may only wish to accept digital photographs for which it has technical infrastructure to maintain and that donors are willing to provide descriptive information, e.g. captions.

Possible areas of exclusion, many of which NARA addresses in its policy, are photographs that are already readily available elsewhere; that are saved in a proprietary format which cannot be accessed; and that are created at a low resolution or are embedded in application software, such as spreadsheets.

One final consideration is that one does not necessary need to accept digital photographs and promise to retain them forever. Berkeley provides a useful scale of four levels of providing access to digital collections:

- (1) Archived: stored and maintained for long-term.
- (2) Served: kept locally with no commitment as yet to long-term retention.
- (3) Mirrored: a copy of collections residing elsewhere with no commitment to long-term.
- (4) Linked: collections elsewhere and library points to it, but has not control over it (Berkeley Digital Library SunSITE, 1996).

Therefore a repository may only wish to agree to serve a gift of digital photographs or mirror a collection until appropriate procedures for long-term management are in place.

### **Negotiating gifts of digital photographs**

Librarians can and should be involved in negotiating gifts of digital photographs. These are a few considerations to keep in mind: ask for the highest quality images. Some donors think that the library may only want lower resolution files, as they are easier to store. However, keep in mind for future reference requests, exhibits, etc., you will want the highest quality possible. Ensure that the donor has checked the accuracy of his/her camera settings. This will help will processing the images later as the date/time information recorded by the camera will be accurate. Request basic captions for the images; this may be as elaborate as a few sentences of description per image or as brief as having the donor gather groups of photographs, say pictures taken in Paris, in a folder labeled Paris.

### **Conclusions**

Digital photographs will become increasingly important to visual curators. Unfortunately in the near term often more interesting, but stable, historical collections will need to wait while digital photographs are appraised and then processed. Having a collection development policy for digital photographs will aid librarians in the thoughtful growth of collections. In this digital era no longer count on "preservation through neglect", but identify the work of local photographers and approach them early to facilitate the transfer of digital photographs, rather than wait until the files are more difficult to manage (Bond, 2004).

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