Guidelines for Preservation of Cultural Properties Photography Focusing on Digital Records

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"Guidelines" are one way to narrow down a number of recommended methods to one and thereby avoid the complexities of making a selection, however guidelines have yet to be set for the best way to save digital records. Rather than recommend a particular method, this text prioritises having multiple choices and not choosing an incorrect one.

1. <u>Desirable Methods for Saving Digital Records</u>

A. How to Save Digital Photographs

(1) Preferred Recording Media

Choose a representative method for saving digital photographs. Also, use media that can be read on multiple operating systems. Candidate media as of 2012 is as follows.

・Memory cards (SD, CF and USB memory)

・HDD

・Optical disks (CD-R, DVD-R and BD-R)

Handle the media appropriately when recording data. When selecting writing speed and quality, choose a method that correctly records data. Each type of media has inherently weak points such as vulnerability to hot humid environments. These weaknesses vary according to media, i.e., static electricity for memory cards, vibrations and shock for HDDs, and strong light for optical disks. Moreover, because degradation, failure, destruction and other adversities run the risk of losing data, important data must always be backed up on another type of media.

(2) Preferred File Format

It is preferable to save uncompressed images for applications that prioritize picture quality. For the format, an uncompressed TIFF format that can record metadata compliant with the Exif international standard is desirable. Even if taking RAW photographs, compose an image appropriate for the file and save the file in TIFF format. It is preferable to save compressed images for applications that prioritize capacity. For the format, a JPEG format that can record the same Exif compliant metadata as uncompressed data is desirable.

(3) Storage Location of Digital Data

It is preferable to use both local and online storage for primary data and its backup. One possible example would be to store data both on a local optical disk and via online storage. And, if cost and handling do not present any problems, doubling the local storage is good, as in a local optical disk,

local HDD and online storage. Digital data is invisible, therefore it is absolutely necessary to organise and manage data so that its whereabouts is always known, no matter what file format is used.

(4) Data Maintenance

Digital data comes with the risk of loss due to media degradation or failure. Even if retaining multiple copies of data, one copy must be periodically backed up on other media while the data is undamaged and uncorrupted. Moreover, because recording systems can become obsolete, promptly copy data to new systems if future maintenance looks difficult.

B.   Hybrid Saving

If not faced with cost restraints and the sort, it is desirable to save photographs both as hard media and digital media, or so-called "hybrid saving." Save digital data along with high quality printouts. Organise prints into albums and store the albums in a dark place of low humidity. With silver-halide prints, digitise the prints and film by scanning, and save the original photographs in a dark place of low humidity. This approach makes up for the shortcomings of each storage method. If it can be adopted, hybrid saving may very well be the best way to save photographs of cultural properties.

2. File Management

Digital data is invisible, therefore image data and databases are virtually inseparable when it comes to managing records. Because photographs can be taken more easily than with film, digital image data continues to grow in volume. A database can be created to manage the data. This not only enables centralised control over and access to images and text, it also enables large-capacity storage systems to be built to store data. There are all kinds of image databases ranging in cost from less than one million JPY to several tens and even hundreds of million JPY, but the most important things are data maintainability and security, and an administrative interface that is easy to use in business operations. Administration is the first premise, and, when it comes to safe secure access, it is wise not to be greedy with functions from the get-go.

3. Precautions in Preparing Digital Photographs

A. Camera

The size of an image is determined by the number of pixels. For what regards solely resolution, the higher the better, but picture quality is not determined by resolution alone. The best resolution will often depend on the purpose of use; there is no single solution. As a yardstick, in terms of printed text and printout quality, somewhere from 12M to about 16M should enable the minimum quality. A major factor in determining picture quality is the size of the imaging sensor. The bigger the better, i.e., the size of the imaging sensor of a camera with interchangeable lenses is one digit bigger than that with a compact camera. If not constrained by other conditions, it is desirable to use a camera with interchangeable lenses in order to prioritise picture quality. Inversely, if picture quality is not

particularly important for the photographic objectives, the size of the image sensor is not a concern. It is necessary to think about the priority conditions (splash-proof, dustproof, portability, etc.) when choosing a camera.

B. Precautions in Taking Pictures

With many cameras, it is recommended to initialise the memory card (format the media) used to record images with that same camera. If formatted on PC or another camera, trouble could occur such as not being able to record images. The most important thing is to check that pictures can be taken properly by actually snapping a test shot prior to taking the actual photograph.

The next precaution is common sense, but do not forget the camera settings and defaults. For example, Exif data, such as date and time stamps, are saved in files, therefore it is imperative to check the camera's clock is correctly set. Moreover, good quality images are not obtained if features that determine photographic conditions, such as ISO and white balance, are wrongly set. In general, cameras are set so that images are attractive to the eye. This does not necessarily mean images are reproduced at the correct color tones or quality, therefore it is imperative to use a gray chart as a reference for obtaining the correct information.

4. About These Guidelines

These guidelines are based on the Guidelines for Preservation of Cultural Properties Photography jointly prepared by the Society of Photography and Imaging of Japan and the Japan Society for Photographic Technology on Cultural Heritage. The guidelines contain detailed explanations, therefore it is recommended to refer to the actual guidelines. The guidelines can be downloaded from the below websites.

http://www.spstj.org/event/nissya_e_syosai_85.html
http://www.maishaken.jp/file/pres_guideline_20120518.pdf