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Sample Handbook for Digital Imaging Project Documentation

This is a sample workbook that you can use as a template to develop your own customized workflow for your institution's digitization project as well as the specific hardware and software you may be using for your own project. Directions for filling out the Sample Production Record Form are included in the handbook.

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I. Recording Information on the Production Record

(See *Sample Image Production Record Form*)

One Image Production Record should be created for each item scanned and retained for administrative purposes, creation of metadata records, or creation of metadata tags for the web pages where the items will be posted. Different parts of the Production Record may be filled out by different persons involved in the process from selecting items, scanning, metadata creation, and posting to the web. The image production record includes information about:

- original source
- digitization
- derivative file production
- web posting

Original Source Information:

1. **Title:** If the original item possesses a formal title, enter it. If the item has no title, check "None".
2. **Cataloger-Supplied Title:** If the original item does not have a title one will need to be created for the catalog and/or metadata record. It may also be used as a title in the metadata put in the web page coding.
3. **Caption:** Examples of captions include a label on a photograph or notes written on the back of a photograph, which identify a person, structure, or place depicted in the image. Enter caption or check "None"
4. **Author/Creator/Photographer:** If the name of the author, creator or photographer is known, enter it here or check "Unknown". Examples include a person or an organization which served as the author(s), photographer(s), artist(s), craft-person(s) etc. that created the **original item**.
5. **Format (photographic image, map, document, other):**
 - *Photographic Image* – check appropriate type of photograph. If type is not listed check "Other" and enter the type in the blank space.
 - *Map* – for all maps.
 - *Document* – for textual documents such as correspondence, record books, newspapers, books etc. Check "Manuscript" if handwritten or "Print" if printed.
 - *Other* - for all other formats such as postcards, posters, sketches, etc. Enter the media type in the blank space provided, for example postcard
6. **Date:** Enter the date that the item was created or published.
 - *Exact Date* – This may be a year, month and year, or day, month and year.
 - *Circa* – This may be a single year or a range of years.
 - *Unknown* – items for which the date is not known and an estimate can not be determined. *Date Range* – e.g. a diary.
7. **Size/Dimension (inches)** Enter the height and width of the item, measured in inches. If "Other" record height and width to the nearest 16th of an inch.

8. **Pagination:** Check "Single" if the item requires only one scan to be made to digitize it (e.g. a photograph or single page document). If the item requires multiple scans (e.g. a book, multiple page document or map needing multiple scans), check "Multiple" and record the number of images to be created.
9. **Brief Description:** Enter a description of the item in the space provided. Note names of people, buildings, structures, roads, landmarks, activities, events (e.g. library opening).
10. **Physical Condition:** Rate the condition of the item as good (not damaged or degraded), fair (some damage) or poor (extensive damage). If damaged note type.
11. **Location:** Where the original item is normally located. Note class # or shelf location if not classified.
12. **Rights:** (See "When Works Pass into the Public Domain" chart by Lolly Gasaway, U. North Carolina <http://www.unc.edu/~unclng/public-d.htm>)

*If the original item was **published** (e.g. book, newspaper, etc)*

- Federal document – **Public domain**
- Before 1923 - **Public domain.**
- 1923-1977 **without** notice - **Public domain.**
- 1923-1963 **with** notice. If copyright not renewed after 28 yrs. – **Public domain.** If renewed copyrighted 95 years from original publication date – **Not in public domain.** Most were not renewed - state docs probably now in public domain.
- 1964-1977 **with** notice. Copyrighted for 95 years from original publication date – **Not in public domain.**
- 1978- March 1, 1989 **without** notice. Copyright was retained only if registered within 5 years of Berne Convention Implementation Act (i.e. by March 1, 1994). If item is a state document probably in public domain.
- 1978-present **with** notice or 1989-present **without** notice. Life of author + 70 years. **Not in public domain.**

For items that appear not to be in public domain:

- Enter the name of the copyright owner or "Unknown".
- Under "Permissions", check "Yes" if permission to duplicate has been granted by the copyright owner
- If permission has not been granted, check "No". **Do not scan item until you have followed up with copyright owner.**
- If permission has been requested but still pending check "Requested" **do not scan item until you have followed up with copyright owner.**

*If the original item was **unpublished** (e.g. manuscript):*

- Creator's date of death plus 70 years. **Public domain.**
- Creator still alive or less than 70 years after death. **Not in public domain.**

13. **Relation:** If the item being scanned is part of a larger collection (e.g. photo or news clipping in a scrapbook, one of a collection of agency annual reports, collection of items donated by one person) record the item's relationship to the collection.

Digitization Information:

1. **Date Scanned/Person Scanning:** Record in spaces provided.
2. **Scanner Hardware:** Check which scanner was used or record make/model if a different one was used.

Tiff Images:

- a. **Scanner Software:** Record which version of scanning software was used (e.g. SilverFast version 5.0).
- b. **Image File Name(s):** For items requiring only one image fill in the filename. For items with multiple scans record the filename of the folder where they are located and the filenames of the first and last images in the folder.
- c. **Scanner Mode:** Check whether the item was scanned in color, grayscale or bitonal (black and white).
- d. **Scanner Resolution:** Check 300 ppi, 600 ppi or other scanning resolution used. Record file size.

PDF Files:

- a. **Filename/File size:** Record filename and file size in spaces provided.
- b. **Software:** Record which version of Adobe Acrobat was used or other software used to create the PDF.
- c. **Scanned from Original:** Indicate whether the PDF was created by scanning the original document and whether it is keyword searchable or non-searchable.
- d. **Converted from TIFF:** Indicate whether PDF was created by converting TIFF files and record folder name of TIFFS.

Derivative Files:

1. **Date Created/Person Creating:** Record in spaces provided.
2. **Access Images:** For compressed access images that will be posted on the web. Record the format (JPEG or list other). For items requiring only one derivative image fill in the filename. For items with multiple derivatives record the filename of the folder where they are located. Indicate the resolution of the derivative file.
3. **Thumbnails:** If thumbnail images were created record the format (JPEG or other). For items requiring only one thumbnail fill in the filename. For items with multiple thumbnails record the filename of the folder where they are located. Indicate the resolution of the derivative file (e.g. 72 ppi).

Storage/Backup:

1. **CD-R:** Indicate whether CD-R copy was made
2. **Other Backup:** Indicate any other backups.

Metadata:

1. **Metadata record:** Indicate whether a metadata record was created
2. **Web Page Metadata:** Indicate whether web page metadata was created. This will be created by the person posting the files to the web.

II. Image Capture

The instructions included below are a step-by-step guide to capturing quality images for your digitization project. These instructions are based on the *Western States Digital Imaging Best Practices* http://www.cdpheritage.org/digital/scanning/documents/WSDIBP_v1.pdf available via the Collaborative Digitization Program web site at www.cdpheritage.org and have been modified with permission from the CDP Scan Center User Handbook. Before beginning your scanning project it is strongly recommended that you read the *Best Practices*.

System Startup and Preparation for Scanning:

1. **Turn on scanner** and wait until the “Ready” light comes on. The computer should already be “ON”.
2. If this is the first time you are using the Scan Center:
Create a folder for your project’s scanned image files.
We suggest creating a folder that will uniquely identify your institution. You will use this folder to save your images after scanning. You may need to setup additional folders for Access images, Thumbnail images, or to separate scans from different collections.

Example for Scanning Images Using SilverFast and Photoshop:

1. **Double-click the Adobe Photoshop icon on the Desktop.** This will launch the Adobe Photoshop image editing software.
2. **Place the item to be scanned** on the scanner bed, following the lines along the top left edge of the bed. **NOTE:** It is important to get at least one edge of the object properly aligned with the scanner bed. If you do not do this the scanned image will be skewed. We recommend that you use the left side of the scanner much as you use a standard copy machine. It is not necessary to align the top edge as well, since you will be able to select the exact area that is going to be scanned later in the process.
3. **3. In Adobe Photoshop select File Import SilverFast (Epson).** This will open the SilverFast scanner interface.
4. **Set the image Bit Depth.** Select the appropriate Bit Depth for the original material.

Original Format	SilverFast Setting
Black and white text – 1 bit	1 bit Line Art
Black and White Photograph	12 Bit Grayscale
Color Photograph	36 Bit Color

5. **Click the PreScan icon** in the SilverFast interface. PreScan will create a low resolution

sample image of the object in the scanner.

6. **Select the Area to be Scanned.** When the PreScan process is complete SilverFast will display an image of the scan bed. Select the area to be scanned by moving the crosshairs to a corner of the image and clicking and dragging to the opposite corner. Dotted lines will appear to indicate the area selected. If necessary resize the selected area by clicking and dragging the “handles” that appear on each side of selection area.

HINT: Some objects include borders, mounting boards, etc. Best practice is to select the entire object to capture a preservation snapshot of the object and to preserve important information such as the photographic studio or hand-written notes. It will be possible to later crop the image to remove these items for display. For some objects it may be necessary to make a separate scan of the image area without borders and mounts to achieve the best quality image.

7. **Set the spatial resolution to the appropriate level.** Once you have selected the scan area you can properly set the resolution to the level appropriate to the object. Please review the *Western States Digital Imaging Best Practices* http://www.cdpheritage.org/digital/scanning/documents/WSDIBP_v1.pdf for details on *Guidelines by Source Type*.

- a. **In the SilverFast interface on the General Tab.** Locate the “Resolution” box.
- b. **Set the Resolution** to achieve the appropriate number of pixels across the longest dimension of image.

Original Size	3000 pixels long dimension	5000 pixels long dimension
2" x 2" slide	1500 ppi	2500 ppi
3" x 5"	600 ppi	1000 ppi
4" x 7"	450 ppi	725 ppi
8" x 10"	300 ppi	500 ppi

*Please see the *Western States Digital Imaging Best Practices* for recommended resolutions for text documents, maps and graphic materials. See also the *Image Resolution Table (Photographs)* <http://libr.unl.edu:2000/scanning/index.html>.

8. **Assess Tonal Quality**
 - a. **Are details in highlight, midtone, and shadow areas captured without loss?**
 - b. **Is the image too light or too dark overall?**
 - c. **If you've included a grayscale target, is it reproduced faithfully?**
 - d. **Is there any Clipping and Spiking in the histogram?** Open the SilverFast Histogram by clicking the Histogram icon on the Toolbar.

Many Tonal Quality problems can be corrected by manually adjusting the White/Black Points of the image:

By default SilverFast automatically adjusts the white and black points of an image. However defects in the image or false white and black points can create an image with poor quality. Use the manual White/Black point selectors to correct images that have a poor tonal quality.

- a. **Select the Densitometer tab on the SilverFast Interface.** The densitometer gives you a pixel view of the image and displays tonal values for individual pixels. To open more than one densitometer hold down the **ALT** key while clicking the Densitometer tab. The SilverFast densitometer displays CMY color values in a range from 0% (white) to 100% (black).
 - b. **Select the White Point.** Find the white point by pressing the **CTRL-SHIFT** keys. A small red crosshair will appear over the whitest point in the image. The pixels will appear in the Densitometer as black pixels. Using the White Point Selector on the Toolbar, move the white triangle over the image until you find the pixel indicated by the crosshairs. This pixel should have the **lowest** (closest to 0) values in the densitometer. Click on the pixel with the White Point Selector to set the white point of the image.
 - c. **Select the Black Point.** Find the black point by pressing the **CTRL** key. A small red crosshair will appear over the blackest point in the image. The pixels will appear in the Denistometer as white pixels. Using the Black Point Selector on the Toolbar, move the white triangle over the image until you find the pixel with the **highest** values (closest to 100) in the densitometer. Click on the pixel with the Black Point Selector to set the black point of the image.
 - d. **Open the Histogram to evaluate corrected tonal quality.** Select the Histogram icon on the Toolbar to display the Histogram window. The Histogram will initially display the uncorrected Histogram. Pressing the **ALT** key will display the histogram with corrected white and black points. Evaluate the histogram for clipping and spiking – repeat the steps above until clipping and spiking are eliminated.
- HINT:** Due to imperfections in the original object it may not always be possible to eliminate all clipping and spiking in your histogram. Borders, backing mounts, lost emulsion, rips, tears, etc., can introduce false white and black points that skew the histogram graph.
9. **Create Final Scan.** Once Resolution and Tonal Quality has been set click the “Scan RGB” button (or “Scan Gray” for grayscale images) in the SilverFast interface. This will initiate the full scan of the object in the scanner and send the completed scan to Photoshop.
10. **Save the Image.**
 - a. In Photoshop select File Save.
 - b. Set the File Format to: TIFF.
 - c. Select the appropriate folder in Western Trails Images.
 - d. Give the image a unique file name based on local practice. See *Western States Digital Imaging Best Practices* for sample file naming schemes.

III. Creating PDF Files

To create a PDF document from your individual images, first select the files to be converted. Make sure that they are in page order. If you have a large number of images (pages) to be converted, it is recommended that you do it in batches as large numbers can slow down the processing.

1. Highlight the **files** to convert.
2. Right click and select **Print**.
3. **Photo Printing Wizard window** should come up, click NEXT
4. **Picture Selection window** with images of the files selected, click NEXT.
5. **Printing Options:** select a printer – Acrobat Distiller.
6. **Printing Preferences:** If you have odd sized pages, you will need to make some adjustments here as the Distiller will default to 8.5x11. Select Printing Preferences, Advanced. Under the Paper Size, select the required size for your images or use the PostScript Custom Page Size and set your own parameters. You will also need to adjust your Print Quality (dpi). Since the PDF is your access image, a dpi of 150 is standard. This will reduce the size of your files for faster loading once they are online. OK, OK, NEXT.
7. **Layout Selection:** Select Full page photo print. NEXT.
8. Select **location** and **file name** for document. SAVE.
9. **Repeat procedure** until all images converted.
10. Move completed PDF file to appropriate **network drive** for access.

IV. Preparing Derivative Images for the Web

Using Photoshop Actions:

Photoshop includes an “Action” feature that allows a group of instructions to be performed on an image. Actions are similar to “Macros” found in common word processing applications.

Actions that Create Access and Thumbnail Images According to the *Western States Digital Imaging Best Practices:*

Access Image – Fit 640 x 480 pixels 150 ppi:

1. Fits images to fit on a **640 x 480 pixel screen**. Images wider than 640 pixels will be resized to 640 pixels; images taller than 480 pixels will be re-sized to 480 pixels.

Examples:

- a. A portrait image measuring 1298 x 1882 pixels will be resized to 331 x 480 pixels.
- b. A landscape image measuring 900 x 600 pixels will be resized to 640 x 427 pixels.

Note: Because this Action does forces an absolute height for images this is ideal for landscape images. Portrait images will be reduced in height to fit on a single screen, extremely tall images may be reduced too small for proper viewing.

2. Changes image **resolution to 150 ppi**
3. Saves image as a medium quality **JPEG**.

Access Image – 640 pixels wide 150 ppi:

1. Fits images to **640 pixels wide**. Images wider than 640 pixels will be re-sized to 640 pixels; image height will be proportional to 640 pixels.

Examples:

- a. A portrait image measuring 1298 x 1882 pixels will be resized to 640 x 928 pixels.
- b. A landscape image measuring 900 x 600 pixels will be resized to 640 x 427 pixels.

Note: Because this Action does not force an absolute height for images this is ideal for portrait images, however images may not be fully visible on all computer monitors.

2. Changes image **resolution to 150 ppi**
3. Saves image as a medium quality **JPEG**.

Access Image – Fit 800 x 600 pixels 150 ppi:

1. Fits images to fit on an 800 x 600 pixel screen. Images wider than 800 pixels will be resized to 800 pixels; images taller than 600 pixels will be re-sized to 600 pixels.

Examples:

- a. A portrait image measuring 1298 x 1882 pixels will be resized to 414 x 600 pixels.
- b. A landscape image measuring 900 x 600 pixels will be resized to 800 x 533 pixels.

Note: Because this Action does forces an absolute height for images this is ideal for landscape images. Portrait images will be reduced in size to fit on a single screen, extremely tall images may be reduced too small for proper viewing.

2. Changes image resolution to 150 ppi
3. Saves image as a medium quality JPEG.

Access Image – 800 pixels wide 150 ppi:

1. Fits images to 640 pixels wide. Images wider than 640 pixels will be re-sized to 640 pixels; image height will be proportional to 640 pixels.

Examples:

- a. A portrait image measuring 1298 x 1882 pixels will be resized to 800 x 1160 pixels.
- b. A landscape image measuring 900 x 600 pixels will be resized to 800 x 533 pixels.

Note: Because this Action does not force an absolute height for images this is ideal for portrait images, however images may not be fully visible on all computer monitors.

2. Changes image resolution to 150 ppi
3. Saves image as a medium quality JPEG.

Thumbnail Image – Fit 200 x 150 pixels 150 ppi:

1. Fits images to fit on an 800 x 600 pixel screen. Images wider than 800 pixels will be resized to 800 pixels; images taller than 600 pixels will be re-sized to 600 pixels.

Examples:

- a. A portrait image measuring 1298 x 1882 pixels will be resized to 103 x 150 pixels.
 - b. A landscape image measuring 900 x 600 pixels will be resized to 200 x 133 pixels.
2. Changes image resolution to 72 ppi
 3. Saves image as a low quality JPEG.

Thumbnail Image – 200 pixels wide 150 ppi:

1. Fits images to 640 pixels wide. Images wider than 640 pixels will be re-sized to 640 pixels; image height will be proportional to 640 pixels.

Examples:

- a. A portrait image measuring 1298 x 1882 pixels will be resized to 200 x 290 pixels.
 - b. A landscape image measuring 900 x 600 pixels will be resized to 200 x 133 pixels.
2. Changes image resolution to 72 ppi
 3. Saves image as a low quality JPEG.

Using Actions on Individual Items:

1. Open the file you want to modify
2. Select the appropriate action in the Action Palette
3. Click the “Play” button on the Actions Palette
4. Follow the dialog boxes to save the image.
 - a. Select the appropriate folder.
 - b. Create a unique file name for the image.
 - c. Set Image Quality to Medium or adjust the slider to create the smallest file with the best quality.

Using Actions as Automated Batches:

NOTE: Before running the Actions, create two **new folders** – one called Access, the other called Thumbnail [or choose appropriate folder name]. These will be the output folders for images that have been modified by Actions.

Make sure that all master images are backed up or marked read-only to avoid overwriting them with improperly set actions.

1. Open Photoshop.
2. Select File Automate Batch.
3. Select the CDP Action set.
4. Select which Action you wish to perform on a set of images.
5. Put the master CD in the computer or select the folder where images are stored.
6. Specify the CD as the **Batch Source Folder**. If the CD has subfolders, enable "Include all Subdirectories".
7. Set the **Access** folder you created as the Destination Folder.
8. Check "Override Action Save-in Commands".
9. Enter any additional settings for the filename. Default settings are "Document Name" + "Extension" which will not alter the filename for the master image. Projects may wish to add "TH" to the existing file name to indicate Thumbnail images. See the *Western States Digital Imaging Best Practices* for more information on file naming schemes.
10. You can either have the action stop if an error occurs, or have it save errors to a log file. Saving to a log file keeps the process moving (and you can walk away while it is working), but requires you to go back and verify everything worked smoothly.

Making your own Actions:

If the Actions provided are not meeting local project specifications you can also create your own custom actions. Most Photoshop Menu functions can be incorporated into an Action either directly or by "Recording" actions performed on an image. Please consult your Photoshop Help documentation for more information on creating Actions.

V. Writing Files to CD-R

1. **Insert a CD-R disk** into the CD-RW drive (bottom CD tray) on the Scan Center computer.
2. **Select "Open writable CD Folder using Windows Explorer" OK.**
3. **CD Drive (F:) window should appear.** Leave this window open.
4. **Navigate the upper file menu** to the location of your saved images.

5. **Drag the files and folders** that you wish to burn into the CD Drive window.
6. **Select “write these files to CD”**.
7. **Rename the CD** for your records.
8. **Verify** the CD was correctly written by reopening the CD and individual files.

HINT: Because writing to CD is a computer intensive process do not continue to scan or run other software while burning CDs. Too many open programs or computer processes can cause information to be lost as the CD is written.

NOTE: Selectively open individual files in Photoshop to verify that no errors occurred during the writing process. Best practice also suggests creating secondary backup disks directly from files stored on the computer rather than copying previously burned CD-Rs which may have undetected defects that will be replicated.

Labeling & Storing Your CD-Rs:

Recent experience has shown the using felt tip pens and adhesive labels can cause the failure of CD-Rs over time due the chemical interaction between inks, adhesives and foils found on CDs.

- Best practice is to use water-based felt-tip pens available from archival supply companies and CD-R manufacturers.
- Write labeling information on the clear hub of the CD, not on the area covered by the CD foil that holds data information.
- Store CDs in non-abrasive sleeves or in jewel cases.
- Store CDs in cool, dry place.

For more information on storage and handling of CD-Rs consult the following websites:

- **Mitsui – Storage and Handling Recommendations**
http://www.mam-a.com/technology/technical_papers/
- **CLIR Publication 121- Care and Handling of CDs and DVDs: A Guide for Librarians and Archivists**
<http://www.clir.org/PUBS/reports/pub121/pub121.pdf>

VI. Metadata

There are two types of metadata associated with a scanned item:

- **metadata records** and
- **metadata tags** included on the web page where the item is posted.

Cataloging/Accession and Metadata Records:

If your institution is a library, cataloging and creation of metadata records may be done by your cataloger. Items scanned for your project may already have a catalog or museum accession record. Records for the original items should be created at the time they are scanned. URLs for the scanned and posted items can be included in the catalog record.

If a metadata record is going to be created use best practices.

Examples include:

- **Nebraska Memories Metadata Guidelines**
<http://www.nlc.state.ne.us/nebraskamemories/metadata.html>
- **CDP Metadata Working Group Dublin Core Metadata Best Practices Version 2.1**
<http://www.cdpheritage.org/cdp/documents/CDPDCMBP.pdf>

VII. Posting to the Web

Web pages for scanned items may be posted according to your institution's established design of the web site. Additional metadata tags may be used.

VIII. Backup Storage

Consult with your Institution's about backup procedures. Backup for image files in addition to CD-R, and for the web site, should be part of your workflow.

Questions?

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