California Revealed
Guide for Digitization of Two-Dimensional Objects

Scope

This guide covers the digitization of the following types of two-dimensional materials which will become the master surrogate files for long-term storage:

- Visual images (photographs, postcards, drawings)
- Manuscripts (hand-written documents; includes journals, letters, diaries, ledgers)
- Printed text (books, yearbooks, articles, pamphlets, certificates, newsletters, reports)

Equipment

There are various brands and types of scanners that can be used to digitize flat, two-dimensional, objects. Each scanner will vary in how it operates both mechanically as well as through its proprietary software; however, the general guidelines and standards to consider when using a scanner to digitize two-dimensional ephemera are applicable.

Preparation

Planning

- Organize/arrange items by theme, location, or dates
    - Organizing the items thematically will make the scanning process more efficient as well as allow the materials to be grouped together by like-themes. This will help make scanning and describing more efficient.

Scanning Process

Clean the scanner and photos

- Wipe the scanner glass with a plain, lint-free cloth
- Lightly wipe off the item with a dry, anti-static cloth
    - This will help reduce static electricity on the object and prevent it from attracting more dust particles and hair
    - Note: If handling photographs, handle the item by the edges or wear white, cotton gloves made for handling photographic materials

Set File Properties

- Open the scanner's scanning application
- Turn off auto settings
- Set the ppi (pixels per inch)
    - This will vary depending on the size of the object you are scanning
    - Refer to Appendix I for suggested DPI settings
- Set the bits per channel
    - 24-bits for color
    - 8-bits for black and white
- Set the file-type
    - The preferred file type for long-term preservation is TIFF
    - Note: When saving images, it is recommended that you save them as a TIFF rather than a JPEG. JPEGs are adequate for on-line sharing, but lose quality when compressed to make a smaller file. TIFFs do not use compression and are a large file size even when

the image is re-sized. They are best for archival purposes—all image detail that was recorded in the scanning process is preserved in this format.

- Preview the scan
    - Check for the following:
        - Cropping
            - Crop the image to minimize the white space around it
            - Ensure that all edges are visible
        - Skew
            - Ensure that the angle of the image is not lopsided
        - Dust, hair, other introduced artifacts
- Once satisfied, select “Scan”

File Naming

Determine and keep a consistent and unique file naming convention to aid in future retrieval and access of the digitized object.

- Keep the name to 15-20 characters in length
- Recommendation:
    - Date_location_subject_sequence
    - Examples:
        - 20160315_Seattle_ppmarket_001.jpg
        - 20160316_Seattle_needle_001.jpg

Metadata

Descriptive metadata is the information that will help you search and find the object or find groups of related objects. It is beneficial to collect as much descriptive metadata at the time of scanning as possible as this will save you time and effort in the future. It is also possible to collect this information before the scanning stage. This is best collected via a spreadsheet.

- Basic information to collect about the object includes:
    - Title
    - Description
    - Date
- There is a great deal of information about an object to collect which is outside the scope of this guide; however, resources regarding such information are available in the Resources section. Consult California Revealed’s Metadata Guidelines.

Editing

- Editing a digital file should not change the overall “look and feel” of the original source material. Editing should not repair tears, stains, markings, or any other blemishes found on the original. Edit only access copies.
- Basic editing tools such as crop, skew, and contrast can be used while previewing the scan.
- Do not apply sharpening to the digitized object.

Quality Control

- As you scan, be sure to review the digital files on a regular basis.
- Basic quality control includes:
    - File can be opened
    - File name is correct
    - Image is not rotated or backwards
    - Image is not skewed, off-center, or unevenly cropped

- No unwanted materials (dust, hair) or digital artifacts in the image

Appendix I: Scanner Setting Recommendation Tables

These suggestions represent the suggested settings for creating Master surrogate files for long-term storage based on the FADGI Guideline's Four-Star quality level for imaging. The Four-Star rating defines the best imaging practical and is suitable for a variety of uses.

Manuscripts and Printed Text

- Manuscripts (hand-written documents; includes journals, letters, diaries, ledgers)
- Printed text (books, yearbooks, articles, pamphlets, certificates, newsletters, reports)

File Format	TIFF
Resolution	400 ppi
Bit Depth	16
Color Space	Adobe 1998 SRGB ProPhoto ECIRGBv2
Color	Color

PPI Suggestions for manuscripts and printed text based on size

Original Size	4000 pixels on longest side
2" x 2"	2000 ppi
3" x 5"	800 ppi
4" x 7"	600 ppi
8" x 10"	400 ppi

Visual Images

- Visual images (photographs, postcards, drawings)

File Format	TIFF
Resolution	600 ppi
Bit Depth	16
Color Space	Adobe 1998 SRGB ProPhoto ECIRGBv2
Color	Color

PPI Suggestions for photographs based on size

Original Size	6000 pixels on longest side
2" x 2"	3000 ppi
3" x 5"	1200 ppi
4" x 7"	900 ppi
8" x 10"	600 ppi

Additional Resources

Ashenfelder, M. (2014). *Personal Digital Archiving: The Basics of Scanning*.
A basic introduction to scanning. Information related to scanner setup, file formats and compression.
https://blogs.loc.gov/thesignal/2014/03/personal-digital-archiving-the-basics-of-scanning

Banach, M., Shelburne, B., Shepherd, K., Rubenstein, A. (2011). *UMass Amherst Libraries: Guidelines for Digitization*.
A detailed guide to digitization for projects. Covers determination of the type of scan based on end use, file naming conventions, hardware and software selection, and quality control.
https://www.library.umass.edu/assets/Digital-Strategies-Group/Guidelines-Policies/UMass-Amherst-Libraries-Best-Practice-Guidelines-for-Digitization-20110523-templated.pdf

Bogus, I., Blood, G., Dale, R.L., Leech, R., Mathews, D. (2013). *Minimum Digitization Capture Recommendations: Association of Library Collections and Technical Services Preservation and Reformatting Section*.
Highly detailed information regarding the practice of digitation. Many links to additional resources.
http://www.ala.org/alcts/resources/preserv/minimum-digitization-capture-recommendations

Dublin Core Metadata Initiative. (2012). *DCMI Metadata Term*
Technical resource regarding the Dublin Core metadata schema.
https://www.dublincore.org/specifications/dublin-core/dces

Federal Agencies Digital Guideline Initiative. (2016). *Technical Guidelines for Digitizing Cultural Heritage Materials*.
Technical guidelines for digitization which many cultural heritage institutions follow and from which the recommendation in this guide are derived from.
http://www.digitizationguidelines.gov/guidelines/FADGI%20Federal%20%20Agencies%20Digital%20Guidelines%20Initiative-2016%20Final_rev1.pdf

Library of Congress. (n.d.). *Personal Archiving, Preserving Your Digital Memories*.
Library of Congress resources for personal digitation projects. A bit dated; however, concepts are presented in an approachable and tangible manner.
http://digitalpreservation.gov/personalarchiving

Metcalfe, L. (2017). *Six Steps to Digitizing Your Family Photos*
Basic overview of personal scanning projects. Covers organization, equipment, storage, and settings.
https://www.familysearch.org/blog/en/steps-digitizing-family-photos

Paladini, F. (n.d.). *Dublin Core Basics: The Beginners Guide*
Simplified approach to Dublin Core metadata elements. Elements are presented as html tags; however, examples are relevant, helpful, and clarifying.
http://paladini.github.io/dublin-core-basics

Stanford Libraries. (n.d.). *Best Practices for File Naming*.
Stanford Libraries best practices for file naming conventions. Provides useful information for consideration when determining a file naming convention.
https://library.stanford.edu/research/data-management-services/data-best-practices/best-practices-file-naming

For questions about preparing paper materials for scanning, please contact California Revealed at: team@californiarevealed.org or 916-653-5074.