Recommendations for Researchers Digitizing Onsite and on a Budget in Archives and Libraries

Permissions and Communication

First, contact the institution where the digitization will take place to ensure that all work will be in accordance with their policies. When contacting them, also ask about any resources that will be available. Note that an institution may grant permissions to copy but that this may or may not include permissions to publish or share. Make sure to check with the institution for all applicable permissions.

Recommendation: Maximize Impact & Benefits

Digitizing materials onsite is a great way for researchers to continue conducting research while away from the primary archives. Digitizing materials and sharing them online with the world so that peer reviewers, students, and other scholars can also use the resources dramatically increases the benefits to all involved, including the researcher conducting the digitization and the archival host institution.

The UF Digital Collections (UFDC) and the Digital Library of the Caribbean (dLOC) operate on a permission-based model. This means that holding and host institutions, and researchers can grant permissions to share resources online and to digitally preserve those resources while retaining all rights to their materials. The standard grant of permissions explicitly prohibits UFDC and dLOC from for-profit or commercial uses, because those rights are retained and controlled by the entity granting permissions. The standard grant of permissions is online here: http://dloc.com/dloc1/digit.

Recommendation: Utilize Onsite Resources

To obtain the best possible results in a less than perfect situation and to avoid the costs of unnecessary equipment, it is important to make the most of on-site resources. Many archives and libraries provide some basic resources for photographing their collections. Typically this is a flatbed scanner or a copy stand with lights to be used with a camera. By contacting them prior to visiting, you may be able to reserve equipment or ensure other supports are in place.

Recommendation: Contact the UF Digital Collections for Help

If you have questions on the equipment, process, permissions for loading the new resources online, or other concerns, please contact us at UFDC@uflib.ufl.edu or 352-273-2900 for assistance.

Handling after Capture

If the images must have restricted access, follow best practices for naming and organizing files and for maintaining redundant copies to minimize the risk of data loss. Contacting local IT staff is always recommended in case they may be able to provide additional assistance in properly archiving materials.

If the images can be shared, follow best practices for processing the images and loading them to an Institutional or Subject-based repository. Archival Master image files should be in the TIFF 6.0 format whenever possible; from these files the "use" formats are derived.

Handling after Capture: UF Researchers and dLOC Partners

UF researchers can load materials directly to the Institutional Repository (IR@UF) which is one of the collections within the UF Digital Collections that also include many subject-based collections. dLOC partners can similarly add materials directly to dLOC.

Single items can be loaded to both dLOC and the IR@UF using the online self-submittal tool. A video of the process along with additional information is available here: http://ufdc.ufl.edu/ufirg/irsubmithelp

Bulk loading is more efficient for large quantities of materials. Bulk loading requires greater organization up-front for both the metadata and file organization. Because of this greater up-front need, UF researchers should contact the IR Coordinator (UFDC@uflib.ufl.edu) and dLOC partners should contact the dLOC Director (dLOC@fiu.edu) for clarification before beginning and should remain in contact with any questions during the process.

Bulk loading requirements:
- Post-processing:
  - Post-processing for image quality is recommended whenever possible. See the *Digitization Manual for the Digital Library of the Caribbean (dLOC)* for more information on "Image Manipulation" and "Performing Quality Control": http://dloc.com/info/manual
- Metadata:
  - Use the spreadsheet template to creating metadata in bulk for use in bulk loading: http://digital.uflib.ufl.edu/technologies/documentation/spreadsheettemplate.xls
  - Depending on the general type(s) of materials, please contact us (UFDC@uflib.ufl.edu and dLOC@fiu.edu) for help in simplifying/expanding the template for your needs. There are many fields listed that are not required and many other supported fields not listed; this template includes what is generally best for most projects to see in getting started.

- - Each row in the spreadsheet template will create an entry for a unique item. The items can be discrete intellectual or bibliographic units or they can be different volumes or parts within a larger intellectual or bibliographic entity.
- File organization:
  - - The files to be loaded as part of the bulk loading process must be organized into folders with each folder corresponding to a single row in the spreadsheet template.
    - The folders must be named to appear in the order in which they appear on the spreadsheet.
- Transferring files
  - - Once the files are ready for transfer, contact us (UFDC@uflib.ufl.edu and dLOC@fiu.edu) to arrange to transfer via FTP or using a portable external hard drive.

Two Image Capture Scenarios

Disclaimer: Please be advised that these equipment recommendations are for specific non-optimal conditions and limited budgets. These recommendations are for use in achieving the best results given multiple limitations. As such, they do not entirely conform to standards and best practices. In optimal conditions, archival master image resolution should be at least 600ppi for photographs and finely detailed documents and at least 300-400ppi for text based documents.

Capture Scenario 1: Bringing a Flatbed Scanner with a laptop or onsite computer

Recommended equipment:
- Plustek OpticBook 3600 Flatbed scanner
- EPSON Perfection 4490 Flatbed scanner
    - Flatbed scanners are less versatile and considerably slower if you are capturing entire books.
    - Select an accurate .icc profile if the scanner can be color calibrated.
    - Do not use any automatic image adjustment settings.
    - Use a gray scale Kodak Q-13 separation guide as a reference for color. Scan and retain the guide for each session, and use it to calculate the color correction in Photoshop.
    - Some advantages of flatbed scanners:
        - Higher resolution
        - Relatively inexpensive compared to DSLR's
        - Simple to use
    - Some disadvantages of flatbed scanners:
        - Production is slower compared to DSLR's
        - Original document size limitations
        - Can be destructive to book spines- archivists may not allow their use.
        - Lower cost units not color managed

Capture Scenario 2: Bringing a Digital Camera, with an on-site copy stand and lights

Recommended equipment:
- DSLR:
    - Canon EOS 60D DSLR w/Canon EF-S Macro lens - 60 mm - F/2.8
      Or
      Nikon D7000 w/Tamron SP G005 Macro lens - 60 mm - F/2.0
- Accessories:
    - 1 extra camera battery (total of 2)
    - 1 extra Secure Digital storage card (total of 2)[1]
    - Kodak Color Separation Guide with Grey Scale, #Q-13

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[1] Secure Digital storage cards have built in write protect switches to prevent accidental erasure.

- o Small bubble level
- Software:
  - o Image editing software such as Photoshop
- Optional support equipment:
  - o Boston Rocker book cradle

Using the DSLR with a copy stand:
- Resolution
  - o Set the camera to its highest resolution.
  - o Set the camera to shoot images in the highest resolution uncompressed either in manufacturer's native format or the jpeg format.
    - ▪ If the jpeg file format is used, then set the compression level at its lowest setting.
- Exposure
  - o Set the camera's exposure mode on manual. Correct exposure can be obtained through comparing the automatic mode exposure setting and a few trial and error exposures.
- Mounting the camera to the copy stand
  - o Mount the camera to the copy stand using the screw mount on the bottom of the camera.
  - o Use the bubble level on the face of the lens rim to align the focal plane parallel to the book page; this may be directly on the copy stand or on a book cradle.
    - ▪ Check the axis to make sure it is level on both the left and right planes
    - ▪ Check the axis to make sure it is level on both the front and back planes[2]
- Color
  - o Place the Kodak Q-13 Grey Scale in the exposure frame and shoot it.
  - o Use the grey scale to set the color balance of the camera according the specific cameras instructions.
  - o When exposure and color balance has been set properly the camera images should accurately represent the subject of the camera in both color and exposure, if not, the exposure should be adjusted accordingly.
  - o Once exposure and color balance are properly set, they should not be changed unless the lighting changes.
  - o Remove the grey scale from the image frame
  - o Retain the digital grey scale for reference in post capture processing.
- Positioning and shooting
  - o With a DSLR camera it is important to fill the image frame with as much of the source document as possible. Look through the camera viewfinder and adjust the height of the copy stand to fill the image frame and then refocus the camera.

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[2] Checking the planes for both axes will prevent keystoning and distortion of the image.

- Pointers for specific materials
  - Archival materials (letters, drawings, etc)
    - Shoot the whole page of the source document and allow for a small border in case any important markings or annotations are near the edge of the document.
    - If the document is on exceptionally thin or translucent paper you may need to use a backing paper to capture text/image detail.
      - Use a white sheet if the paper is thin and has little contrast with the documents text. This will make the light background lighter and provide contrast to the text.
      - Use a black sheet if ink is bleeding through from the back page. This will make the page darker, but drown out the bleed through text.
  - Maps
    - Unless the maps are small, they are generally not recommended for the limited fixed resolution of a DSLR camera. Consider alternate methods that will yield a higher resolution; such as having the Archivist coordinate with a photographic service bureau. As a last resort, it is possible to shoot maps in multiple sections and then assemble the sections in Photoshop. Make sure to capture with overlap. Also consider focusing in on the specific area of interest to achieve the desired level of detail.
  - Books (with or without a book cradle)
    - When shooting books it is usually most efficient to capture all the odd pages followed by the even pages. Be careful not to skip pages. Once everything is captured rename the images with their correct pagination using the free Bulk-rename Utility (www.bulkrenameutility.co.uk). Then merge the files.

After capturing the images, the next steps are dictated by their intended use. Please see the "Handling After Capture" section.

Additional Resources:

- Digital Historian Series: Using Digital Tools for Archival Research:
  - http://uiuc.libguides.com/content.php?pid=6243
- Digital Cameras – A Beginner's Guide:
  - http://photo.net/equipment/digital/basics/
- DSLR starters' guides: White Balance
  - http://www.digitalslrphoto.com/dslrbasics/startersguides/13068/dslr_starters_guides_white_balance.html
- Calibrate Your Scanner
  - http://desktoppub.about.com/cs/colorcalibration/a/cal_scanner.htm
- *Digitization Manual for the Digital Library of the Caribbean (dLOC):*
  - http://dloc.com/info/manual