The purpose of this manual, as prescribed by the grant application, is to provide specifications for digitization capture and file creation; procedures for digitization, file editing, and linking; and a detailed timeline for production goals and management tasks. It gets updated as necessary as the project evolves.

The project workflows include:
1. Physical condition review
2. Scanning
    a. Epson
    b. Bookeye
    c. Further guidance for in-house scanning
    d. Microfilm scanning by vendor
3. Scanned image review
    a. In-house images
    b. Vendor-supplied microfilm images
4. Image management
    a. Storage
    b. LZW compression
    c. Image enhancement in Photoshop
    d. PDF creation
        i. Standard
        ii. Oversize
5. Uploading & Digital Object creation
6. Scanner maintenance
    a. Cleaning
    b. Calibration

Project workflow description

1. *Physical condition review*
    The Project Supervisor [PS] reviews folder contents for physical condition and arrangement and addresses preservation challenges that affect scanning. The bulk of this process comprises flattening documents and correcting errors in arrangement. An item count is also performed at this stage for later comparison with scan counts. Microfilm reels are randomly reviewed for quality and completeness before being sent to a vendor for digitization.

2. *Scanning*
    Student scanning technicians perform in-house scanning for the project, using an Epson Expression 10000XL flatbed scanner and a Bookeye 4 Basic planetary scanner. Digitization of collection microfilm is outsourced to a vendor.
    a. Epson scanning instructions
        i. Turn on scanner, then open SilverFast software
        ii. Scan settings
            1. Scan Type: 48-> 24 Bit Color
            2. Scale% should both read 100.0
            3. 400 dpi
        iii. Document placement
            1. One side of the document is to be placed against the spacer taped to the left side of the scanner bed. The top (or side) edge of the document should be located at the black hash mark on the spacer.
        iv. In the SilverFast "Name" field, enter the file name for the image being scanned, using a naming convention that reflects the hierarchy of the processed collection. All file names will end with "r" or "v" for "recto" and "verso."
            1. Single sheet items

          a. The file name for the recto side of the first item in the first folder of the first box of the collection is created by combining the collection number with those filing elements: M092b001f001i001r.

    2. Multi-sheet items

          a. The file names for multi-sheet items receive work-letter suffixes as necessary: M092b001f001i001ar, …001av, …001br, …001bv, etc.

          b. Certain multi-sheet items in the collections are so long as to make it impractical to assign a letter to each sheet (e.g. 100+ page articles). For these items, each sheet was numbered individually without letters using the single sheet item naming convention (see above).

v. Click "Prescan."

    1. Check prescanned image for folds or other issues, then adjust the document as necessary and prescan again. Rotate image as necessary.

    2. Use the marquee to select the scan area. Leave a narrow margin of white space around the edges of the document and include the ruler in your scan.

vi. Click "Scan."

    1. In the "Save As" box that appears, ensure "Save as type" is TIFF, then click "Save."

b. Bookeye scanning instructions for loose and bound volumes

  i. Turn on scanner, then open FreeFlow software.

  ii. Open or create object

    1. To start a folder

          a. Click "New." For "Project," enter OOH. For "Object name" enter the file name, using a naming convention that reflects the hierarchy of the processed collection.

              i. The file name for the first folder in the first box of the collection is created by combining the collection number with those filing elements: M090b001f001

          b. Click "OK."

    2. To continue a folder in progress

          a. Click "Manage." Select the object corresponding to the folder being scanned, and click "Open Existing Object."

  iii. Under "Full Settings," click the "Setup" button and load settings template

    1. "OOH_loose" for loose paper scanning

    2. "BookVplatenTIFF400" for bound volume scanning

  iv. Placement

    1. Loose papers

          a. Place ruler next to document, as close as possible without overlapping.

          b. Ensure the red laser line is within the bottom 1/3 of the document. Pressing the power button will cause the laser line to appear for 10 seconds.

    2. Bound volumes

          a. Rest the volume on the book cradle, sliding the sides of the cradle to account for the volume's size.

          b. Ensure the red laser line is on the bottom 1/3 of the volume.

          c. As needed, place shims under the cover for support. These will need to be adjusted throughout the scanning of a single volume.

          d. Position the glass platen

               i. Lower the platen using the front handle until it is just above the volume. Wipe both sides of the glass platen clean of dust and lint with a soft cloth (repeat this cleaning after every 100 scans or as needed).

        ii. Using the silver handle at the back of the platen, slide the platen left and right so that its center is directly over the volume's gutter.

       iii. Snugly position the platen against the volume by pressing down firmly on both the back and front handles. If positioned correctly, both sides of the glass should be resting against the pages being scanned, and the gutter and the "V" joint should nest together in parallel.

       iv. Confirm that the outer edges of the volume are in contact (or nearly) with the platen.

    v. Click "Scan"

      1. Ensure scanned image has captured the entire document or page spread. If the scan is unsatisfactory, reposition the document as necessary and scan again, using the "Replace Current Image" function.

    vi. Image Treatment & Export

      1. For bound volumes, do not perform Image Treatment or Export [completed later by PS]

      2. For loose papers, when a folder is finished, proceed to the Image Treatment tab. For each image individually, perform necessary cropping and rotation.

        a. Rotate images (90° or 180°) with curved arrow buttons on the right side of the Image Treatment screen.

        b. To crop, create and adjust content clips around each sheet, leaving a narrow margin around the document. Access the content clip tool through the tool bar the top of the Image Treatment screen. Content clips can also be used to account for skew, but this generally should not be necessary.

        c. Click "Perform IT on All Images." Once this process is finished, the Export tab will automatically open.

          i. Ensure Image Treatment functioned properly for each image.

        d. Click "Export Images"

          i. Load export settings template "OOH_loose"

          ii. Under Choose Base Output Directory, browse to the appropriate folder (e.g. OOHscans\Box02\folder003)

          iii. Click "OK." Wait for green check next to TIFF progress bar, then click "Close."

c. Guidance on scanning various attachments, etc., for in-house scanning

    i. **Transcripts:** Scan a transcript immediately after the document it transcribes. Do not scan the blank verso of a transcript.

    ii. **News clippings:** Scan both sides of news clippings if possible. If not glued to document, scan a clipping immediately after the document with which it is associated. If you have trouble getting the Bookeye to capture a news clipping, try using a white background.

    iii. **Items glued to a document:** If glued item can be easily, *GENTLY* folded back, scan without folding it first, then scan with glued item folded back. Please ask for assistance if needed.

    iv. **Documents in mylar sleeves:** Carefully remove document for scanning and replace in sleeve afterward. Ask for assistance if needed.

    v. **Photocopies/printed scans:** Leave in place but do not scan.

    vi. **Exhibit description cards:** Leave in place but do not scan.

    vii. **"Wrong place" notes:** Leave in place but do not scan.

    viii. **Blank white pieces of paper:** Leave in place but do not scan.

    ix. **Large ink stains:** Use extra care. Wipe down scanner and wash hands after scanning stained document.

    x. **Translucent paper:** Use a white background in order to ensure a legible scan.

    xi. **Envelopes:** Scan an envelope with the first sheet of its contents (recto and verso, respectively).

    xii. **Notes indicating the location of out-of-place items:** Usually written in pencil on acid-free paper. Scan only sides with writing on them (usually just the recto).

d. Microfilm scanning by vendor

    i. Vendor is supplied with image specifications and naming conventions as part of the shipment of microfilm reels (use negatives) and a blank external hard drive. Vendor performs digitization, contacting PS with any questions or concerns, then returns microfilm and hard drive containing scanned images.

3. *Scanned image review*
   The PS reviews all scanned images in preparation for their compression and combination to ensure image quality and proper sequencing, and to verify that no items were overlooked in the scanning process.
   a. Review of images scanned in-house
      i. Special care is taken to check in frequently on the work of each individual student, especially during their first weeks as scanning technicians.
      ii. Using Windows Photo Viewer, images are checked quickly for image quality (margin, orientation, folds)
      iii. Contents of physical folders are compared to digital ones to ensure that no documents were overlooked. File names are checked, ensuring they follow the established naming convention and that each sheet has associated recto and verso files
   b. Review of vendor-supplied microfilm images
      i. Proper file hierarchy and conformance to naming convention are ensured
      ii. Images are checked for completeness and quality
      iii. When it appears a digitization error has been made, images are checked against microfilm frames
      iv. Any errors are corrected by the vendor

4. *Image management*
   Note: The FreeFlow export process creates extraneous folders that need to be deleted by the PS.
   a. *Storage*
      i. Digital storage structure
         1. Prior to assigning each reviewed folder to a scanning technician, the PS creates and names computer folders and subfolders to provide prescribed storage locations for saving the scans on College servers. Folder structure and naming convention: Box01\folder001\
   b. *LZW compression of TIFFs (Photoshop)*
      Once images in a folder have been reviewed, the PS compresses them using a batch process in Photoshop. The workflow is as follows.
      Note: LZW compression of images is only necessary on those scanned using the Epson scanner, since the FreeFlow software used with the Bookeye scanner performs LZW compression automatically upon export.
      i. File→Scripts→Image Processor
         1. Select appropriate folder
         2. Save in Same Location
         3. Save as TIFF with LZW Compression
         4. Click "Run"
      ii. In original folder
         1. Delete original, uncompressed TIFFs
         2. Move new, compressed TIFFs out of "TIFF" folder to appropriate location (e.g. folder001)
         3. Delete empty "TIFF" folder
   c. *Image enhancement in Photoshop*
      Though rarely necessary, certain images require minimal editing in Photoshop to enhance clarity. This is most commonly the case with microfilm frames which are very dark or very bright as to make them almost illegible. Adjusting the brightness and contrast levels of these images takes minimal effort and makes them easier to read.

   d. *PDF creation (Acrobat Pro)*
      Once TIFF images have been compressed, the PS combines and converts them into optimized 100 ppi PDF/A-1b compliant files. The workflow is as follows.
      i. Edit→Preferences→Convert to PDF→TIFF→Edit Settings→Compression
         Note: This setting is retained by Acrobat Pro and does not need to be modified with each session.
         1. Grayscale: ZIP
         2. Color: ZIP
      ii. Create→Combine Files into a Single PDF

1. File Size (page icons lower right corner): Larger Files Size (largest icon)
2. Add TIFF files
3. Click "Combine Files"
iii. File→Save As→Optimized PDF
   (Message: 'The PDF document needs to be saved before it can be optimized')
   1. Click Yes
   2. Name the file following the naming convention (this version will be overwritten by the optimized file)
   3. Click Save
iv. In the PDF Optimizer window
   1. Settings: 100dpi-jpegmax
      Or create the 100dpi-jpegmax preset for next time:
      Settings: Custom
      Make compatible with: Acrobat 5.0 and later
      Images > Image Settings
          Color Images:
              Downsample: Bicubic Downsampling to 100 ppi for images above 100 ppi
              Compression: JPEG, Quality: Maximum
          Grayscale Images:
              Downsample: Bicubic Downsampling to 100 ppi for images above 100 ppi
              Compression: JPEG, Quality: Maximum
      Save> Save current settings as: 100dpi-jpegmax
   2. Click OK
v. Back in the Save Optimized As window,
   1. Click Save
   2. Click "Yes" to overwrite the uncompressed PDF

5. *Uploading & Digital Object creation*
   a. Transfer PDFs to server
      i. Open FileZilla
      ii. Click Bookmarks→ooh-pdf
      iii. Enter password
      iv. Lower left pane displays locally stored PDFs (...Desktop\OOH PDFs\). Lower right pane displays PDF storage location on server (/www-base/library/prd/library.bowdoin.edu/htdocs/arch/mss/ooh-pdf)
      v. Drag and drop PDFs from hard drive to server.
   b. To add links to Archivists' Toolkit
      i. For each file-level record being linked:
         1. Create a Digital Object instance (Add Instance > Digital Object)
         2. Title
            a. If the file unit will have only one Digital Object instance, retain the auto-populated title, which is identical to the file unit's title.
            b. If the file unit will have more than one Digital Object instance, choose a title to differentiate this one
               i. Note that Digital Objects appearing online will sort alphabetically by title
               ii. For example, if a file unit has a Digital Object instance for a digitization and one for transcripts, you should entitle them this way:
                   1. Digital Surrogates (for the digitizations)
                   2. Select Transcripts (for the transcripts)
            c. If a file unit has more than one Digital Object instance, none of them should have a title that is identical to the file unit title. This means the titles of existing Digital Object instances may need to be updated when new instances are added.
         3. Digital Object ID
            a. Enter the name of the digital file. This must be a unique identifier.
            b. If Digital Object will have more than one File Version, use file name root

         i. E.g. "M01b01f001" should be Digital Object ID where the file version URIs are "M01b01f001textmaster" and "M01b01f001textuse"

4. File Version
    a. Add File Versions as necessary. Multiple versions are to be listed for digital objects of the same format with different use statements (for example, to list both use and master versions)
    b. URI
        i. If the Digital Object will be posted online, enter the URL
        ii. If the Digital Object will not be posted online, enter the local file path
    c. Use Statement
        i. Select statement which best applies to the Digital Object being recorded
            1. For digitizations and transcripts, use "Text-Service"
        ii. Use statements for all file versions within a Digital Object Record should have the same root since they are all the same format
            1. E.g. If one version within a Digital Object Record has the Use Statement "Text-Service" (the most common one), all other file versions of that Digital Object should all start with "Text-"
    d. EAD Dao Actuate & Show
        i. For use versions (most common)
            1. Actuate: onRequest
            2. Show: new
        ii. For master versions
            1. Actuate: none
            2. Show: none
    e. Click OK
5. Click OK

c. Exporting and posting updated finding aid
    i. Once links have been added and saved, export updated finding aid by the following process
        1. Click "Export EAD"
        2. Name the file with the following convention: M091-ead
        3. Check three boxes:
            a. Number component levels
            b. Suppress components and notes when marked "internal only"
            c. Include DAO's in output
        4. Save to █████████████████████████████████████
        5. Open webpage: █████████████████████████████████████
        6. Click on "Draft" button and wait while it connects and processes file(s) – a process report will come up after a minute or so
        7. Check links to make sure change(s) are ok
        8. Then go back to ███ and click on "Live" button & wait until the process completes.

6. *Scanner maintenance*
    a. *Cleaning*
        i. Epson
            1. After each folder and at the end of every shift, students wipe the scanner glass with a clean, dry cloth.
            2. When necessary, PS uses glass cleaner sprayed on a soft cloth to more thoroughly clean scanner glass
        ii. Bookeye
            1. As needed, cradle will be dry-vacuumed by PS
            2. At the end of each shift, students wipe down scanner and work area with a soft, dry cloth
            3. As needed, PS will clean scanner surfaces (besides the cradle and touchscreen) with glass cleaner sprayed on a soft cloth

b. *Calibration*
- i. Epson
  1. On the first of every month, PS recalibrates using SilverFast calibration target.
- ii. Bookeye
  1. PS will perform series of 7 adjustments monthly through web browser scan interface. (*See Bookeye Setup manual for detailed instructions.*)
     a. White Balance
     b. Auto Focus
     c. Scan Start
     d. DPI Measurement
     e. Laser Check
     f. Gear Correction
     g. Repeat White Balance
  2. ICC Profile Update
     a. New ICC profiles should be created monthly for best color results.
        i. Delete any .icm file present on the Desktop
        ii. In the large blue Bookeye Reference folder, locate the white envelope and remove the IT8 target.
        iii. Ensure that the Bookeye's cradle is in its flat position and that the glass platen has been removed.
        iv. Place IT8 Target on Bookeye center with as little skew as possible. Use the laser line to help straighten the target. (Briefly pressing the power button will cause the laser line to appear for 10 seconds.)
        v. From the Desktop, open the Scan2ICC folder, then the Scan2ICC application. Click "Run"
        vi. In the first window, the subscription number should already be filled in. Leave the IP box blank. Click "OK" and again "OK" in the next window.
        vii. Click "Scan IT8 Target"
        viii. When an image of the target appears in a new window, place the red marquee around the target. Use the arrow buttons to zoom in or out as necessary. Click "Extract" then "OK"
        ix. Select batch number R130810 from the list (this is the batch number listed on the IT8 target)
        x. Save .icm file to Desktop.
        xi. In Firefox, load the Bookeye's web browser scan interface , under "Setup" at the Poweruser level.
        xii. Click "ICC profiles"
        xiii. Next to "AdobeRGB" click "Browse"
        xiv. Load .icm file that was just saved to the Desktop
        xv. Click "Send File"
     b. *Freeflow note:* In order to take advantage of updated ICC profiles, all scans must have the color space setting on "AdobeRGB" under Setup.

Project timeline

MONTHLY WORK (3-year project)

Year One:

Month	Plan	Notes	Actual numbers & new goals
[One month prior]	Recruit and hire Proj. Mgr.		
Month 1	Draft procedures manual Procure office equipment Procure planetary scanner Hire and train student scanners Review papers, scan items, perform q.c., combine files, and create links		
Month 2-3	Review papers, scan items, perform q.c., combine files, and create links Create "About the Project" Web page		
Month 4	Conduct formal 3-month performance review of Proj. Mgr. Review papers, scan items, perform q.c., combine files, and create links		
Month 5-6	Review papers, scan items, perform q.c., combine flies, and create links	6-month production goal: 19,650 scans completed	50,010 scans completed
Month 7	Conduct formal 6-month performance review of Proj. Mgr. Convene focus group to critique results to date Produce formal 6-month progress report Engage LYRASIS to digitize microfilm Review papers, scan items, perform q.c., combine files, and create links		
Month 8-12	Review papers, scan items, perform q.c., combine files, and create links	12-month production goal: 39,300 scans completed(+ 30,260 microfilm scans completed)	78,520 scans completed

Year Two:

Month 1	Produce formal to-date progress report Review papers, scan items, perform q.c., combine files, and create links		
Month 2-6	Review papers, scan items, perform q.c., combine flies, and create links	18-month production goal: 58,950 scans completed	111,098 scans completed
Month 7	Conduct formal annual performance review of Proj. Mgr. Produce formal to-date progress report Review papers, scan items, perform q.c., combine files, and create links		
Month 8-12	Review papers, scan items, perform q.c., combine files, and create links	24-month production goal: 78,600 scans completed	161,700 scans completed (including 31,232 microfilm scans)

Year Three:

Month 1	Produce formal to-date progress report Review papers, scan items, perform q.c., combine files, and create links		
Month2-6	Review papers, scan items, perform q.c., combine files, and create links	30-month production goal: 98,250 scans completed	175,059 scans completed (including 31,232 microfilm scans)
Month 7	Conduct formal annual performance review of Proj. Mgt. Produce formal to-date progress report Convene focus group to critique results to date Review papers, scan items, perform q.c., combine files, and create links		
Month8-11	Review papers, scan items, perform q.c., combine files, and create links		
Month 12	Review papers, scan items, perform q.c., combine files, and create links Complete final report	36-month production goal: 117,940 scans completed(+ plus 30,260 microfilm scans completed) = 148,200 scans completed	176,235 scans completed (including 31,232 microfilm scans)