

Quilt Index Image Digitization Specifications

**Michigan State University: MATRIX and MSU Museum
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Overview of Process:

Images and information submitted to the Quilt Index are uploaded, entered and managed by contributors using dedicated, password-protected web entry forms. Workflow varies depending on the contributor's needs. Contributors usually:

1. scan their images (if they are not already digitized) at a preservation quality high resolution;
2. apply only minimal color adjusting or cropping necessary for each image, using standard Photoshop tools;
3. preserve the high resolution version on CD, DVD, hard disks and/or servers,
4. create a down-sampled access version for storage and display in the Quilt Index (700 pixels wide, 72ppi resolution)*Note a new interface design now allows for display images at 700 pixels wide., previous specifications stated 550 pixels wide and these will still be viewable on the website);
5. (OPTIONAL) create a higher quality access image for zooming on the Quilt Index site (max filesize 4MB, 1424px wide), and
6. upload the access version and optional zoom version to The Quilt Index Repository using online entry forms.

Various sized images and thumbnails for the public Quilt Index website are made automatically through the site's system architecture.

Scanning:

We recommend contributors begin with a sample of ten slides to scan, troubleshoot software and hardware configurations, assess general image quality of the collection, check resolution quality against quilt benchmarks, determine necessary image modifications, and develop a workflow. Ten sample images should be prepared and uploaded to the Index, and then reviewed by members of the contributor team as well as the Quilt Index staff.

Four basic benchmarks for image quality for quilts are: color faithfulness, quilt pattern detail, fabric pattern detail, and quilt stitching detail. In so far as the quilt pattern, fabric patterns and/or stitching detail are visible in the original image, projects should aim to maintain those visible elements in the digitized image. This is a largely qualitative process; so to maintain consistency within each Quilt Index digitizing project we recommend as few individuals digitizing as possible.

Higher scanning resolutions capture more information about the image (more density of dots of color from the original), thus the file size and, up to a certain point, the quality of the image increases with higher resolutions. However, the digital scan is subject to the limitations of the original image.

A standard scanning resolution for preservation images is 600ppi. This is a good resolution to begin with to benchmark the quilt details listed above. Choose a small subset of quilt images with both color variation and obvious lines or points of contrast. Scan the slide or print at a series of different resolutions and save the scans. Zoom in to look closely at several areas in each digitized scan, checking that the color, quilt pattern detail, fabric pattern detail and quilt stitching detail are comparable to the original image.

Because of the variation in photographing conditions for each quilt day, there may be great variation in the quality of images. Digitizers should be aware and should modify adjustments to images as necessary. There may be certain days, for example, for which the lighting conditions are consistently yellowed (tungsten), and need to be color adjusted.

Cropping: We recommend very little cropping of images. The main object for the Quilt Index is the quilt itself. Thus anything appearing in the image beyond the binding of the quilt may be cropped. However, do not ever crop off edges of the quilt.

Details/Close-ups: If there are separate close-up images of a quilt, these can be scanned and uploaded as well. These may have quilt stitching visible that is not visible in the full image of a whole quilt. With the pilot contributors thus far, we have not found it useful to try to create digital details from a slide of a whole quilt (by scanning at a very high resolution and zooming in and cropping, say, a block for a detail). However, if you project has very high image quality, you may try this yourself.

Color and Color Correction: We recommend using RGB color. Each site should choose a method for color correction and be consistent throughout the digitizing project. Some pilot projects successfully used Photoshop's auto image correction and used this tool consistently. Others made no color correction at all. Others made color correction in specific situations only and recorded that in the metadata record for that specific image.

File naming:

Each site must determine a unique file naming protocol that connects each image with its associated documentation record and information. Most documentation sites and museums already have a unique identifier through an established acquisition number or a record numbering system. We recommend that you use the corresponding record number to name scanned TIFF or JPEG image files. (i.e. "yourrecordnumber.jpg")

To account for multiple images of the same quilt (such as details of quilting, close-ups of blocks, alternate views, backing, etc), the master full shot will be named "yourrecordnumber.jpg" and the detail or alternate shots of the same quilt will be named "yourrecordnumberA.jpg", "yourrecordnumberB.jpg" etc. In the Index, up to 25 of these additional images can be uploaded as "Derivatives" of any original Master record.

Preservation Images:

We recommend that contributors scan at high resolution and save as uncompressed TIFF files for preservation and master use. Since you are going to the effort to digitize your

slides, it is important to produce a high quality image that can be used by your organization in the future. The low-resolution access version required by the Quilt Index is a relatively poor quality image (for anything besides computer screen delivery). Each site must decide how to save and store these high quality digital files for both preservation and local access. MSU can provide resources and suggestions for how to do this. Our best practices outline is below.

The scanned image for digital preservation should be scanned at high resolution (48-bit color and 600-1200 ppi), saved to TIFF files and stored in multiple copies to ensure preservation. The Quilt Index requires a smaller JPEG access version, however the Repository can also accept these TIFF images for preservation if the contributor desires. Uploading TIFF files will add time to the contributor's process because the TIFF files are significantly larger. Many sites have chosen to burn one CD (see below) and save the second copy of the files to a backed-up server.

CD-R Media Production, Handling, and Storage

General Outline of MATRIX best practices:

- 1) Two CDs: Production (use) and Archive
 - a) Production (use) CD for use and reproduction by staff for clients—Mitsui Silver (100 count at \$95.00)
 - b) Archive CD for storage and preservation—Mitsui Gold Archive CD (Phthalocyanine dye) (100 count at \$160.00)
- 2) Stored in polyethelene sleeves (100 count \$59.00)
- 3) Store sleeved CDs in acid free storage box (unit \$5.05 stores 100)
- 4) General Considerations
 - a) Never touch recording side of CD-R
 - b) Do not use adhesive labels on CD-Rs
 - c) Store vertically in protective sleeve
 - d) Store at room temperature at moderate humidity (below 50%)
 - e) Do not write on CD surface; use water-based, permanent marker, felt tip and write on clear center hub.
 - f) Do not subject to rapid temperature changes and protect from light.
 - g) Store one copy at another site

Access Images for Quilt Index Repository:

For online access the Index currently requires an image file (jpeg or gif) 700 pixels wide, 72ppi resolution. These files will be uploaded to the Index by the contributing site's staff. It can be done when the data entry information is submitted, or separately.

Zoom Images:

We have developed with scalable images for better viewing resolution and offering zooming options. This enhanced access requires higher resolution images. The zoom tool allows users to move across an image viewing detailed sections of that image in a

viewing window. This requires a higher resolution image. These zoomable images should have a maximum filesize of 4MB, and be no more than 1424 pixels wide.

Index Online Reference Images:

Upon submission, there will be an automatic verification that the image is in the right format. MATRIX's Repository will rename the actual digital file with its unique identification number and create the particular web-ready access and thumbnail images needed for online reference and presentation in the Quilt Index pages.

Once uploaded to the Quilt Index, a new unique repository identifier will automatically be created that connects each image with its contributing project and its master record (e.g. Tennessee-a0a0i3-a.jpg where Tennessee = project; a0a0i3 = unique identifier; and "a"= master record, "b-z" = would be for derivative records including details, close ups of blocks, alternate views, etc.)

Recommended Equipment and Software for Scanning:

Any reputable brand-name scanner that can create the specified master and access images will suffice. Contributors need someone with technical expertise to set up and maintain scanner operations. At the time of this publication, MATRIX and MSU Museum (MSUM) use and recommend the scanners and software below. Please contact project leaders for most current equipment. Prices are as of this publication date and your organization comparison shop for equipment.

- Nikon Super Coolscan 4000 slide and film scanner (MATRIX)
- Nikon Super Coolscan 9000 ED, 4000 dpi, multi format, filmscanner (MSUM)
- Epson 1620 flatbed scanner (MATRIX)
- Microtek ScanMaker 9800 XLT, 1600 x 3200 dpi, tabloid size (12" x 17"), flatbed scanner with transparency adapter. (MSUM)
- Photoshop Elements 4.0 -- For the basic manipulation needed for scanning slides and preparing them for the Index, Photoshop Elements 4.0 has the necessary tools. It can be used to place a visible watermark if needed. (It retails for as low as \$50.00.)
- Photoshop CS2 – For more sophisticated options, including plug-ins for digital watermarking, contributors will need a full version of Photoshop (CS2 is the current new version at about \$375 - \$400, less for educational users, about \$170 if upgrading from an old version of Photoshop.)

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