Endangered Archives Programme

Guidelines for photographing and scanning archival material

1   Rationale

The Endangered Archives Programme aims to safeguard archival material by finding a suitable local home for original material and at the same time by digitising it, thus ensuring both long-term preservation and wider access. It is therefore important that the digital copies conform to archival standards. These guidelines will help you to achieve this.

2   Equipment

When copying archival material, you may decide to use a digital camera or a scanner. It is important to get a sense of the dimensions and nature of the material you wish to copy before you purchase any equipment. If you are able, you should survey the collection prior to purchasing equipment, focusing on the type and size of the material you wish to digitise and where the digitisation will take place. It may be advisable to contact the Endangered Archives Programme Curator who may be able to put you in contact with other institutions that have digitised similar material and would have useful advice to share.

Both digital photography and scanning are complex techniques and it is important that a person with the appropriate skills and, ideally, an appropriate qualification is involved with the project. If neither you nor the members of the team have any previous digitisation experience, then you should seek training or advice prior to starting your project.

2.1   Digital Photography

You will need to use a digital single-lens reflex (SLR) camera
- You may need to consider buying a separate camera body and appropriate lens. A compact camera is not appropriate for EAP projects.
- Consider whether you will be using the camera after the EAP project. A professional camera has a shutter life of roughly 300,000 photographs and a 'pro-sumer' camera has a shutter life of around 150,000.
- Do not use an extreme wide-angle or telephoto lens as this will introduce distortion to your photographs (barrelling/pincushion effect). The choice of lens is vital to the success of your project. The focal length should be around 50-55mm.

You will also need to use:

- A tripod or copystand.
- If you choose to use a tripod, it is vital that the camera can be mounted directly over the manuscript.
- You should consider using a spirit level that can be fixed to the camera. This ensures the camera will be straight.

- Consider your light source for illuminating the item. You may need to purchase two [light stands](#). Make sure you do not mix your light sources as they may have different colour temperatures. You should not use the camera flash.
- A light meter is extremely useful for using correct camera settings.
- An industry-approved colour chart or greyscale reference card is essential in order to check the accuracy of the colour captured in the photographs. This is a physical card that is available to purchase on the internet. It cannot be downloaded from the internet and printed, or inserted into your image using software. Approved colour checkers that have been used in EAP projects include: Gretag Macbeth ColorChecker, QP cards, Kodak Color Control Q13 card, Past Horizons Bookmark Photo Scale. If you have any questions about colour checkers contact the EAP Curator.
- If you are digitising slides/negatives, you will need a lightbox.
- To prevent camera shake, consider purchasing a remote shutter release or using tethered photography (whereby you link your camera to the computer).
- External hard drives. It is good practice to regularly back up your images (each day) and to store them in a different location to that of your computer. You will also need hard drives to send your images to the EAP Office.
- Plain card (black or grey) for use as a background mount for the item.
- Snake weights, conservation standard cradles for supporting manuscripts etc. Contact the EAP Curator if you need advice.

2.2   Scanners

There are several types of scanner on the market. They must allow you to save the images in either uncompressed TIFF format, or in uncompressed RAW format which you will then need to convert to uncompressed TIFF. Your images must not be saved as JPEG files.

The type of scanner you chose will depend on your needs and on the cost. It is extremely important to know the dimensions of the material you wish to copy as this will help you to decide the size of your scanner. There are various types of scanner and the physical attributes of your archive will influence your choice. In general an overhead scanner offers the most flexibility and decreases the risk of harming your collection as there is no direct contact, but they are the most costly. The various types of scanners include: overhead or planetary, flatbed, specialised 'V' shaped book scanners, drum, robotic book and large format scanners. Sheet feed scanners are not appropriate for EAP projects. If you need advice on what sort of scanner would be best for your purposes, contact the EAP Curator.

You will need to consider using:

- A scanner.
- An industry-approved colour chart or greyscale reference card, in order to check the accuracy of the colour captured by your scanner. This is a physical card that is available to purchase on the internet. It cannot be downloaded from the internet and printed, or inserted into your image using software. You will need to consider that the size of scanner chosen will have to accommodate this card. Contact the EAP Curator if you need advice.
- If the item being scanned is not particularly fragile and you wish to use glass to gently flatten it, ensure that it is Anti-Newton glass.

- External hard drives. It is good practice to regularly back up your images and to store them in a different location to that of your computer. You will also need hard drives to send your images to the EAP Office.

We regret that we are unable to return any hard drives submitted.

2.3   Other Equipment

Other items you may wish to consider:

- Library standard weights to hold down pages.
- Melinex sheet to help flatten documents (only to be used on items not particularly fragile or brittle).
- Book cradle.

3   Preservation Issues

It is important to consider preservation issues when handling and digitising material.

If you need help on basic preservation of archival material, pest management, mould, moving library and archive collections, environmental control, storage furniture etc., the booklets produced by the Preservation Advisory Centre are extremely useful.

You can read the British Library's policy on wearing cotton gloves here.

For advice on handling items, the British Library has produced several videos which can be viewed here.

You may wish to read 'Preparing Collections for Digitisation' by Anna E. Bülow and Jess Ahmon, London, Facet Publishing 2011
ISBN 978-1-85604-711-1

4   Copying Principles

Your copying process should respect the integrity of the collections. Therefore material from individual collections or archives should be copied together. Do not copy parts of different collections or series at the same time as this increases the risk of confusion. Sometimes this is tempting when you wish to save time with camera settings and photographing similar items, but it should be avoided.

If you are copying a volume, it is important to recreate the original item. Remember to copy the binding: this means the front cover, inside front and back pastedowns, back cover and any blank pages. Work systematically from front to back.

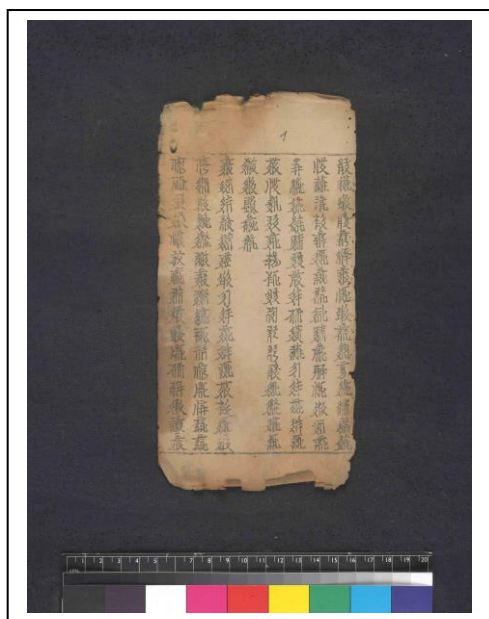## 5   Standards for digital images

5.1   General points

- When using a digital SLR camera, use the viewfinder to ensure the framing of the item is correct (do not solely rely on a display monitor).
- Save the images in either uncompressed TIFF format, or in uncompressed RAW format which you will then need to convert to uncompressed TIFF. Your images must not be saved as JPEG files and then converted to TIFFs.
- Preservation copies must not be enhanced or modified. This includes cropping or colour corrections.
- Each page must be copied on its own.
- Weights or Melinex sheets may be needed to flatten documents. Fingers or pencils should not be used to hold down a page.
- A colour checker and ruler must be included on every page. You must ensure there is sufficient space between the item being digitised and the checker/ruler, both to allow for the edge of the item to be fully captured and for any cropping that may be required in the future.
- The entire page should be included; the edge of the paper must not be cropped out of view. If you are photographing a bound volume, the margin should be included.
- If you are scanning printed (halftone) material from newspapers, books or magazines, the scanner setting must be 'descreened' to avoid any Moiré (wavy) patterning.
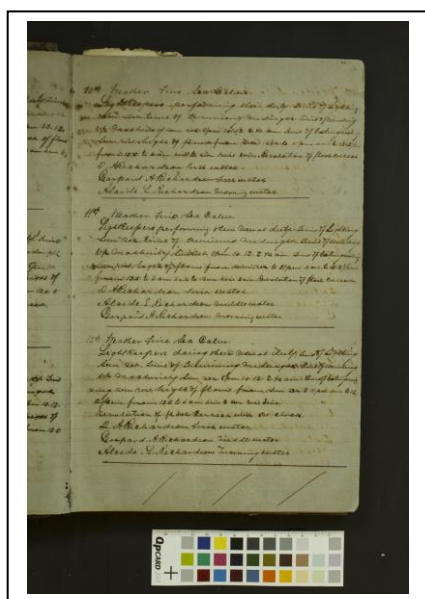
5.2   Minimum digital file standards

- The images must be uncompressed TIFF files. You may need to convert uncompressed RAW files to TIFFs. JPEG files are not suitable.
- The file size should be roughly 30MB at A4 size
- The minimum resolution and colour quality are as follows:

From Originals	
Black-and-white photographs	8-bit greyscale, resolution dependant on size of original likely to be in the range 300 – 1200ppi. It may be appropriate to capture as 24-bit RGB depending on image tone.
Colour photographs	24-bit RGB, resolution dependant on size of original likely to be in the range 300 – 1200ppi.
Slides or small negatives	8-bit greyscale or 24-bit RGB, effective resolution of 300 ppi relative to the size of the original
Printed texts	8-bit greyscale, 400 ppi
Printed texts with half-tone, and other black-and-white illustrations	8-bit greyscale, 400 ppi, 24-bit RGB may be considered depending on characteristic of material
Printed texts with colour illustrated	24-bit RGB, 400 ppi
Manuscripts, maps and other materials	300 ppi, 8-bit greyscale or 24-bit RGB. Spatial resolution can be adjusted to 400 ppi and greater where significant elements to be captured are less than 1.5mm
From Surrogates	
Microfilm	Effective resolution of 300 ppi, 8-bit greyscale, relative to the size of the original and the reduction ratio used in the microfilming.

Example of the quality of image required:

- This image includes a ruler and colour checker.
- There is ample space between the ruler/colour checker and document.
- There is no distortion of the item because the photograph was taken directly overhead.
- The characters are clear and in focus, and the edges of the page are sharply defined.
- There is a plain underlay that contrasts with the item being photographed.

- In addition to the points mentioned above, the gutter of this manuscript has also been included with part of the opposite page showing. This is important when digitising bound volumes.

5.3   Capturing Watermarks

When copying material that contains watermarks, these should be captured during your copying processes. Pages with such features should be copied twice, once to capture the text contained on the page and once to capture the watermark itself. A lightbox will be needed to illuminate the watermark. Details of watermarks should be recorded in your lists (see Section 3 of the Listing Guidelines which you can download from the EAP website).

6   Quality Control

- It is good practice to always check the quality of your images, preferably at the end of each day.
- Back up your images on an external hard drive or server. Ensure copies are kept in different locations.
- When you save the images, make sure they are rotated so that any script is readable.
- When you store digital files or copy them, you must include an MD5 checksum for error detection. When you send your sample and final images to the EAP Office, it is vital that you include a checksum manifest for each digital folder (not for each digital file/image) – in other words, the manifest must list the paths and associated MD5 checksums for each digital file/image within that folder. Free software is available from http://sourceforge.net/projects/fsumfe/ and http://www.fastsum.com/. More information on checksums can be found at http://www.linfo.org/checksum.html
- Checksum manifests should be verified for correctness before storing and/or copying files. FastSum provides the functionality to both create and verify checksum manifests (as do other tools).

7   Naming your digital folders and files

It is vital that your naming structure finishes with numerals.Think about the naming and structure of your digital folders and files from the very beginning of your project. It is important that they are simple and easy to understand.
Digital folders should include:

- EAP Project number
- Other pre-existing reference or classification code given by an archival or other institution, and/or title, abbreviated title of the file/container being copied.

Each name element **must** be separated with an underscore. Only use letters a-z, numbers 0-9 and the underscore symbol _ . Please do not include any blank spaces. Instead of blank spaces please use an underscore _ . Try and keep the name short. **It is also vital that your naming structure finishes with numerals**.

Digital files (images) contained in that folder should include the folder name, plus a running number in sequence with a minimum of three digits. Please do not use any brackets.

Examples:

EAP999_ABC1_001.tif
EAP999_ABC1_002.tif
EAP999_PhotoAlbum3_001.tif
EAP999_PhotoAlbum3_002.tif

If your project is digitising material from more than one collection this should be reflected in the naming hierarchy. If you have any queries regarding the naming of your archive, contact the EAP Curator.

8   Labelling

Your digital copies must be submitted to the British Library on external hard drives.

Each external hard drive must be clearly labelled with either a simple running number or reference code, for example: "EAP999 Hard drive 1".

This number/code must be included in your EAP Lists as it provides a link between the copied material and the descriptive data recorded in the Lists.

9   Submitting Sample Copies

As soon as you start digitisation, and certainly within the first three months of the project, you will need to send sample images and a sample list to the EAP Office. You can send your samples by uploading them to EAP's ftp account or by using a file transfer service such as WeTransfer. Please contact the EAP Curator if you wish to use EAP's ftp account.

10   Submitting Final Copies

Please ensure that all images are correctly rotated for viewing.

A checksum manifest must be included for each digital folder (see para. 6).

Your digital copies must be submitted to the British Library on good quality external hard drives. Do not use CDs, DVDs or USB memory sticks.

Do not partition any part of the hard drive or place restrictive administrative rights on it. The hard drive must not be formatted for a Macintosh computer and **must** be readable on a modern Windows PC.

Ensure the hard drives are securely packed as they can get damaged in transit. Broken or unreadable items will need to be replaced.

Hard drives, CDs or DVDs are not recommended for archival storage. You should consider the long term digital preservation of the material. Contact the EAP Curator if you wish to seek further advice.

Useful resources

The Hill Museum and Manuscript Library has extremely good resources on their [website](#).

September 2017