



Museum & Heritage Microfilm Scanning Services

We specialize in providing microfilm scanning services to a wide range of markets, from document scanning and indexing of contemporary materials to the preservation of historical content in digital form.

We provide a complete digitization solution enabling clients to capture their content and documentary materials. Safety of original materials and high quality output are our top priorities. Through digitization, our clients can serve the dual purposes of providing access to materials either to internal or public audiences. With the additional benefit of providing digital preservation surrogates to valuable materials.

Digitization of surrogate materials

Often organisations have already captured some form of analogue or digital surrogate of original materials. These surrogates were generally created at great expense and digitizing them would be a preferable alternative to the re-scanning of the originals. Services here include microfilm scanning from 35mm or 16mm roll film, microfiche or aperture cards. In addition sometimes modern paper copies of documents have been made and these can be scanned using dedicated document scanners.

Microfilm Overview

Over the past 50 years microfilm has been extensively used in museums and other organisations for the miniaturisation and preservation of paper materials that were then put into more remote storage facilities to reduce costs.

Starting in the 1960's, there were a proliferation of microfilming bureaus in the market providing microfilm services of various standards to various industry sectors. Microfilming is essentially a photographic process with a camera mounted vertically above a flat surface where the originals would be placed during the capture process. The originals area would be evenly lit and the height of the camera above the flat originals surface would determine the reduction ratio of the exposure.

Microfilm always captures black and white (or greyscale) information as colour film was very rarely used due to its expense.

Microfilm formats are:

- 35mm Roll Film
- 16mm Roll Film
- Microfiche
- Aperture Cards

35mm roll film is arguably the highest quality and is most often found in museum environments. 16mm roll film is a faster and cheaper format which was often used in larger commercial organisations. The smaller area of film means that less information was captured as part of the process.





Microfiche captures pages to a similar area to the 16mm roll film and therefore is more often used for the capture of commercial paperwork. Having said that, we have come across microfiche in museum environments,

such as the Imperial War Museum. Microfiche is either a single piece of film with multiple exposures or it is several strips of 16mm roll film cut up and put into a 105 x 148 mm mount.

Aperture cards are Hollerith punched cardboard mounts with a single microfilm aperture mounted to the right hand side of the card board area. These are usually used to capture plans or engineering drawings.

Microfilm has significant benefits as, when stored in the correct environmental conditions, it is estimated to last for up to 200 years.

The capture process is normally carried out to [Silver halide](#) film which is preservation standard and has a robust top coat. It is suitable for prints or for use as an intermediate from which further prints may be produced. The result is a negative copy. Preservation standards require a master negative, a duplicate negative, and a service copy (positive). Master negatives are kept in deep storage, and duplicate negatives are used to create service copies, which are the copies available to researchers. This multi-generational structure ensures the preservation of the master negative.

All film generations are suitable for digitization although it is recommended that the master negative film be kept in deep storage for security.

Microfilm Digitization.

Microfilm digitization is the process by which the paper documentation that has been captured on the microfilm is scanned in to create a digital file. This process requires specialist high resolution scanners and can be carried out semi automatically. The scanned images really open up the potential of the information for alternative uses.

Not only can the images created be used as an alternative preservation surrogate of the originals but also lower resolution JPEG files can be served to the general public, if appropriate, through the Internet or an internal document management database. In a museum context another key advantage is that it is generally cheaper and safer to digitize from microfilm, as opposed to digitizing from the original materials.

The Technology

We use state-of -the-art microfilm scanners called the SunRise 3-IN-1 Turbo Scan Microfilm Scanner. This scanner has additional modules for the scanning of roll film, microfiche and aperture cards and is the world leader in greyscale image quality from microform materials.



Superior scanning capability.
Exceptional camera technology.
With powerful ScanFlo software.



The 3 in 1 TurboScan
Rollfilm | Microfiche | Aperture Card

Case Study:

In the section below is an example Service Level Agreement (SLA) for a project which we have worked on in the past. For confidentiality reasons we have excluded any commercially sensitive data. The SLA lays out the standard specifications which we use in all our contracts. This document is generated internally to Vishal and illustrates the stringent contractual conditions which we impose on ourselves.

1 Project Title

Sample Microfilm Scanning

2 The Client

2.1 *The Client Organisation*

Restricted

2.2 *The Client Authority*

Restricted

2.3 *The Client Technical Contact*

Restricted

3 Overview

3.1 *Materials to be digitized*

The materials are positive microfilms containing images of handwritten manuscript pages. The frames of the microfilm may include double-page spreads. The microfilms have been heavily used and are scratched and in places the microfilming has failed to capture all the information from the original.

3.2 *Volume of originals to be digitised*

Selected frames from seven reels of microfilm. The total number of frames is 1060.

3.3 *Timescale for completion of the project*

The data product will be completed within 6 weeks of the date of receipt of the signed client contract.





4 Scanning Requirements and Standards

4.1 *Scanning Requirements and Standards for the Digital Master Image.*

The selected frames, as defined by the listing provided by the client below, will be scanned.





Reel 5

Frames 63-148
Frames 371-425

Reel 7

Frames 363-477

Reel 8

Frames 355-421
Frames 570-624

Reel 9

Frames 581-905 (to end of reel)

Reel 10

Frames 28-213
Frames 362-413

Reel 14

Frames 429-500

Reel 16

Frames 375-425





4.1.1 FRAMES WILL BE SPLIT AS FOLLOWS:

- Single page items in a frame will be output as a single image
- Frames containing an opening of a book (2 pages side by side) will be split into 2 output images, one for each page.
- Frames containing an opening of a notebook (2 pages one above the other) will not be split and will be output as a single image

4.1.2. RESOLUTION:

All scanning will be at 400 dpi resolution in relation to the original.

4.1.3 COLOUR:

All output images will be in 8-bit 256 grey scale.

4.1.4 OUTPUT FORMAT AND COMPRESSION

All images will be output into Uncompressed TIFF file format.

4.1.5 Image skew must not be greater than 1% compared to the original item. Images will be de-skewed where necessary

4.1.6 Images will be rotated where necessary to ensure that the image content is represented in the correct orientation for end user viewing.

4.1.7 Images may be de-speckled or otherwise cleaned up using automated processes where this will improve readability of the document, but not compromise the content. Where necessary, it is acceptable to increase the contrast/density of images to cause the content to become more clearly readable.

The microfilm images are of variable quality but efforts will be made to ensure that the output image is legible.

4.1.8 Images will be cropped to remove excessive blank

areas around the image, but the information content of the original must remain intact.

The CD-R created by us is a means of data delivery only. We recommend that the client backup all data delivered and also migrate data to other media to protect it for the long term. We will not retain copies of the data once the deliverable has been accepted.

5 Transport, Inventory and Quality Assurance

5.1 *Transport of original materials to and from processing site.*

All materials will be transported by secure insured transport.

The client is responsible for ensuring that all materials will be packed in suitable containers to enable safe movement and storage of originals. Every shipment will include an inventory of all items contained.

We are responsible for the receipt; inventory and checking of originals; handling, storage and their safe return with a full inventory.





5.2 *Methods to ensure that all original materials supplied have been captured.*

We will ensure that every image scanned is counted and reconciled with the total number of items expected to be scanned.

5.3 *Methods of verification of image quality and acceptance criteria. Checks that will be made on converted or compressed image files.*

We will ensure that every image is viewed as it is scanned to ensure that it meets the acceptable quality standard as specified by the benchmark samples and this SLA.

100% of all TIFF and JPEG files will be viewed by us to ensure that they meet the acceptable quality standard. This checking will include:

- Is the output file named for the correct original?
- Does the image include all the information and content of the original material?
- Is the image oriented correctly?
- Does the image represent the content of the original accurately?
- Does the image conform to the standards set in the benchmark images produced by DCS?
- Does the output file conform to the file standards in the specification (Section 4)?

5.4 *Verification of files naming accuracy and delivery of all items.*

We will ensure that:

- All file names have been cross-checked on entry to give a high accuracy level.
- All data delivery media will be double-checked before dispatch to ensure that all expected data has been correctly included.

We will verify that:

- Files have been named accurately through comparison with the original materials for a selected 10% sample.

5.5 *Verification that all originals and data have been transferred back to the client in good condition.*

We must create and maintain records to track the progress of the originals through the digitization processes. At the return of originals at the end of a process, there must be inventory information reflected back to us to assure the complete return of all original materials.

All records must be compared and validated on the return of originals and the Client will sign the delivery note accepting return shipment as correct and complete. The Client and we will check the data to show all items required have been delivered.

6 Client Quality Checks

The Client commits to making the following checks to the work elements delivered:





- That all originals have been returned in good condition as detailed in Section 5 and that there is data for each item in the form of both a TIFF and a JPEG file.
- That the product delivered has been created to the specification set out in Section 4.

7 Client Acceptance Criteria

In the event that the work done by us fails to meet the specification defined in section 4, we agree to rework the affected elements to the required standard at no additional cost or to inform the Client in accordance with clause 3.4 of the Standard Terms of Business.

The Client agrees to return a signed acceptance certificate for each deliverable in which not less than 98% of the work elements meet the specification and to identify any elements that require reworking within 3 weeks of delivery

The Client agrees to notify us of each deliverable in which less than 98% of the work elements meet the specification and to identify the elements that require reworking within 3 weeks of delivery.

Conclusions...

We have a great deal of experience in supporting organisations through the digitisation of microfilm material. Hopefully this document has provided a bit more detail on this process and has given you some ideas about the potential of your collection if it has been microfilmed.

We would be happy to come into your organisation and talk through some of your project ideas. Our experts can then generate a project plan, assess the quality of your microfilm holdings and provide you with a quotation for an example project. If there are any further queries on our services please do not hesitate to get in touch at the details below.

We look forward to being of service in the near future...

