

Scanning and capturing image-based material

A scanner uses a light source and image sensor to digitise flat objects. Some devices can scan transparent film such as slides and negatives. Most come with software that controls the parameters of the device. While some scanners may also give you the option of scanning directly into your image editing software, State Library recommends images be opened and adjusted in image editing software separately.

This guide provides an in-depth step-by-step instruction for scanning and capturing photographic collections, adhering to State Library's minimum standard and international best practice. The screen shots replicated in this guide are for illustrative purposes only and may differ from the software/hardware your organisation has selected.

Step 1

Place the item being scanned face down on the glass bed.



Step 2

Close the lid of the scanner and open the scanning software.

Step 3

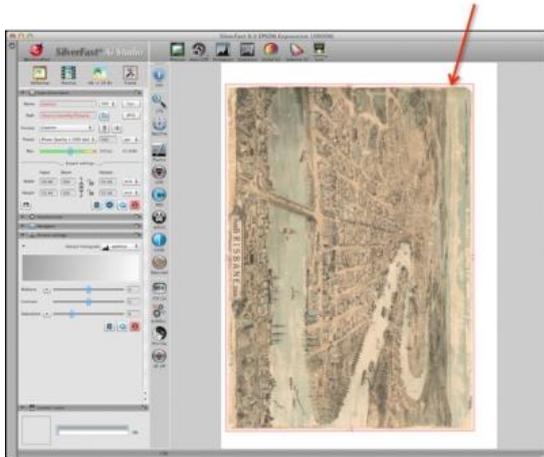
Click on Preview (may be labelled with another name such as Prescan)



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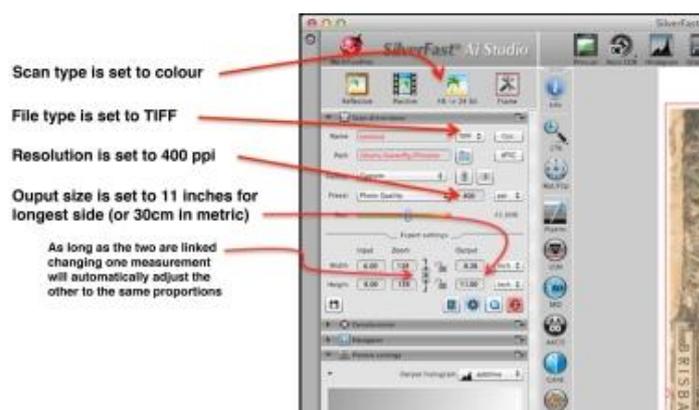
Step 4

Adjust the selection box outside the edges of the photograph or material. Do not use the selection box to crop the image as this is done later.



Step 5

Set the scanning parameters to the following:



Step 6

Click on scan button to digitise image.



You will be asked to supply a file name and a location to save the file. It is good practice to save all files belonging to a collection into a folder or directory that has been created specifically for that collection, even if it only has one image.



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Capture

A capture device is generally a digital camera. The lens of the camera focuses a picture onto an image sensor that converts the scene into pixels of digital information.

Digital cameras can be found on many devices from phones and tablets through to high end, professional Digital Single Lens Reflex (DSLR) equipment.

When using a camera to capture a scene or event, much depends on the photographer's eye as to composition, focus and depth of field. However, when using such equipment to capture copies of pictorial content, some basic principles can be applied.

Step 1

Ensure the original item is evenly lit (a copy stand with lighting directed downwards)



Natural Light



Artificial Light



Copy Stand

Step 2

Set camera above original using copy stand or tripod so that camera back is level to original.



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Step 3

Adjust the height and focus so a small amount of white area shows around the original when viewed through viewfinder or screen on back of camera.



Step 4

Set the camera to manual setting (M) and adjust exposure using a combination of shutter speed and aperture (may need to take some test shots to confirm correct exposure).



Step 5

Select the white balance by pushing the WB button on the camera and then select the option that matches the lighting type (daylight, tungsten, fluorescent).

-  **Auto**
-  **Daylight**
-  **Cloudy**
-  **Shade**
-  **Tungsten / Incandescent**
-  **Flourescent**
-  **Flash**
-  **Custom**



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Step 6

Set the camera to RAW (if no RAW setting, highest quality JPEG as a minimum).



Step 7

Set camera to self-timer or use a cable release.



Step 8

Capture image by pressing the shutter release button on camera or cable release.



Now that you have scanned or captured your images, the next step is to review and finalise the images for archival storage, using image editing software explained in the next section.

Editing scanned images using imaging software

Most image editing software has been designed to cater for a broad range of users including photographers, graphic artists, and filmmakers. The tools and capabilities within the software enables dramatic adjustments to an image.

In the case of heritage-based images, a minimalist approach should be adopted. For instance, adjustments to brightness and contrast should only be made to enhance the detail in the image while still maintaining the look of the original. The same rule applies to



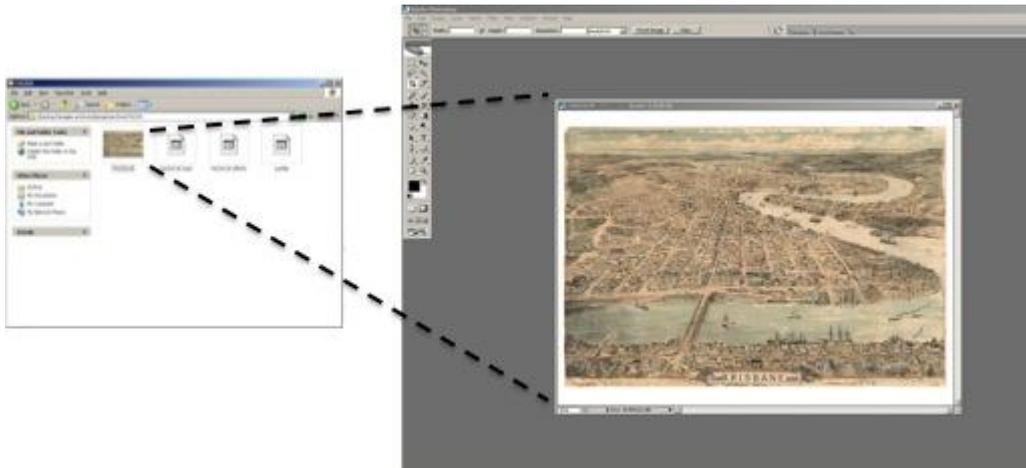
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corrections in colour. These should only be applied so the digital copy matches the colour of the original image. Digital copies may be cropped as long as this does not interfere with the integrity of the object – e.g. white borders on a photograph or a mount board that adds no aesthetic or historical value to the image.

Creating the master file

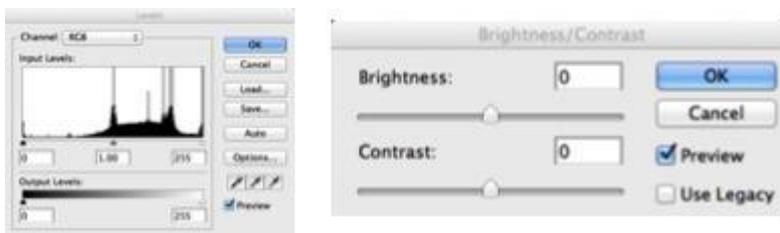
Step 1

Open image in editing software.



Step 2

Adjust the clarity of the image. Depending on the software, this is done using “Levels” or “Brightness and Contrast” controls.



As Scanned



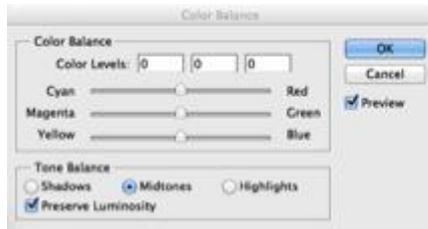
After Adjustment



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Colour correction

Colour images sometimes require corrections to match the original. This can be achieved using Colour Balance or Colour Hue controls.

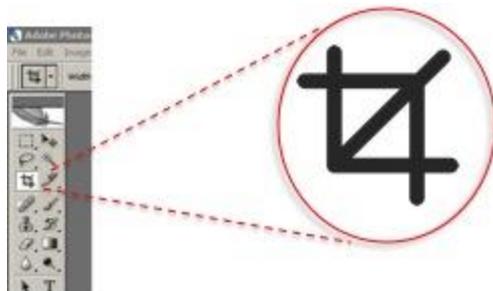


Original Image

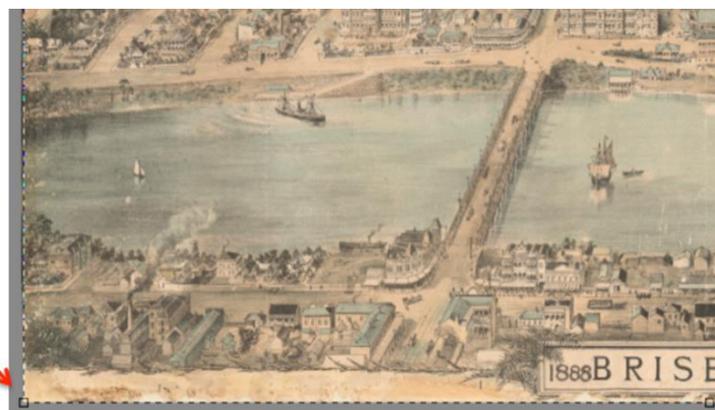
Scanned image requiring colour correction

Step 3

When the image was originally scanned, the selection box was set to include a small amount of area around the outside. We can now crop this out of the image using the Crop tool.



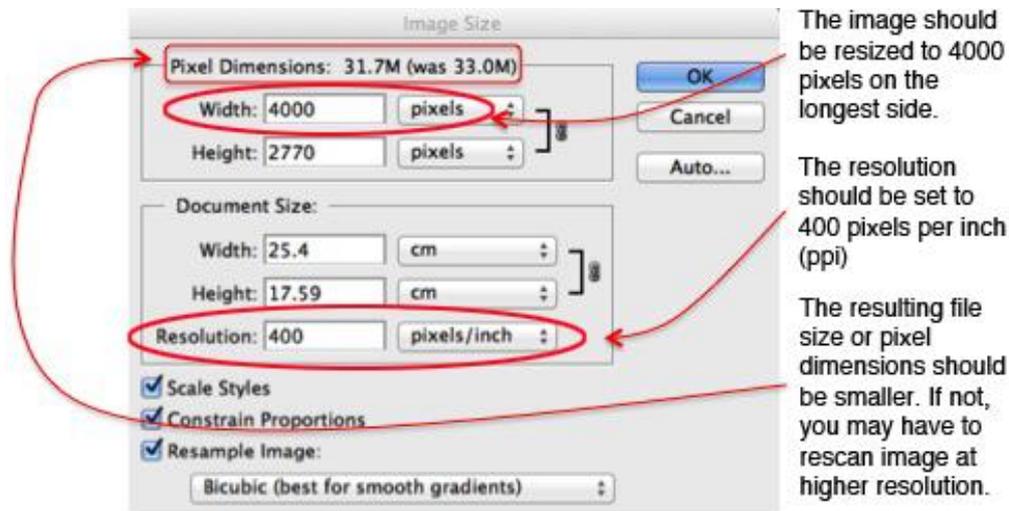
Area around original included when scanned, being cropped



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Step 4

When the original was scanned, the output settings were set to produce a digital image larger than needed to allow for cropping and adjustment. Now this has been performed, we can resize the image to archival standard.



Step 5

SAVE the resized image as a TIFF and store as the **master file**.

Creating a derivative version

Step 6

After saving the archival master TIFF and before closing the image, alter the image size to 100ppi, with 1000 pixels on the longest side.

Save this version as a jpeg with the least amount of compression into a different folder location. Where possible save the jpegs to a different drive keeping the masters and derivatives separate.

Images captured in RAW format

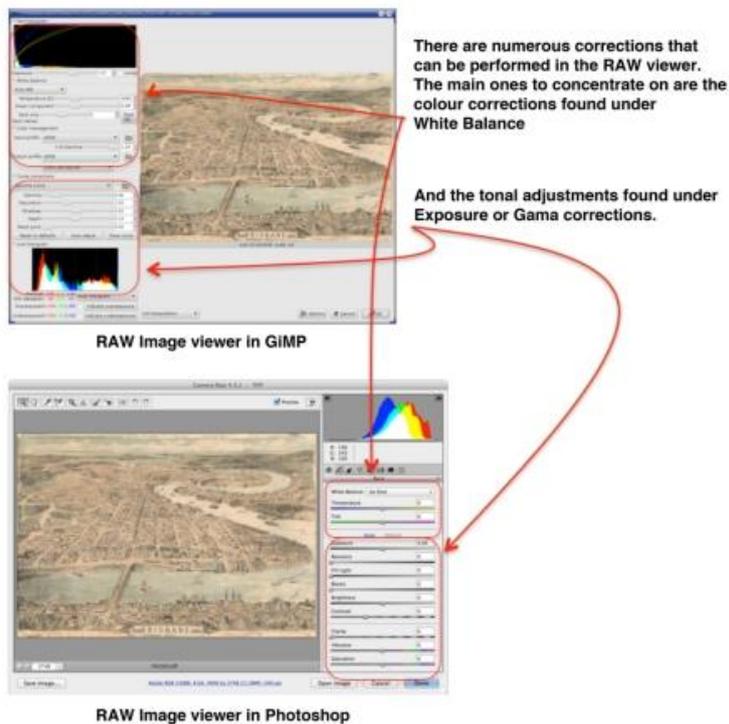
This section refers to images captured in RAW format. Images captured in another format such as JPEG or TIFF should be treated as scanned images (as in previous section).

Step 1

Open the captured RAW image in your editing software. Depending on the software used, you will see a number of tools available to correct or enhance the RAW file. Be aware that some software needs to be updated so it recognises the files coming from your camera. This is particularly so if you have a new camera but much older software.



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Cropping, straightening, rotating, spot removal, etc. is best performed in the editing software, once the corrections above are completed and the result is saved.

Step 2

With the corrections completed, either save the image as a TIFF or open it in your editing software to make final adjustments. From this point, the image file should be treated the same as a scanned image and adjustments made as outlined above.

Step 3

Derivatives can be created as previously outlined in Step 6.

Additional resources

[Photoshop CS2](#) (version released 2004)

Image Editing Software - [GiMP](#) free, multi-platform

[Calibrate your monitor](#)



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Safe storage



Place the digital master or tiff file in the appropriate directory of your computer and add a lock – open a second directory for copies and jpeg derivatives useful for sharing and engagement opportunities. Avoid accessing the archival version for everyday use and add a checksum to each digital file to determine whether data errors were carried over. Source: <https://en.wikipedia.org/wiki/Checksum>

Master files should be stored in more than one location and undergo a periodic check to ensure the file remains stable.

Preservation of digital files

Digital files are commonly saved to CD, DVD, and USB. These storage devices are not designed for long-term storage. They are prone to damage and decay, and are not suitable for large quantities of data. Instead State Library recommends larger, more robust external hard drives or the use of a Network Attached Storage device (NAS).

NAS devices contain multiple hard drives (two or more) that are backed up across each other. If one drive fails, the files are maintained on the intact drive. Partitions can be created within the NAS drive to keep the original master files separate from the derivatives. It is important that the original master files be protected, and accessible only by individuals with authority to ensure they are not compromised or accidentally overwritten.

An alternative solution is to use Cloud based storage. This allows a backup to be uploaded to the Cloud via the Internet, and the service provider delivers a measure of support to maintain the integrity of the files on a subscription basis. The cost increases as the volume stored increases.



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