

## **Scanning for digitisation projects**

With scanning a lot of time can be wasted by using the original badly. Consider this as you read the points below:

- A lot of time can also be wasted by trying to mount the work that you want to scan first (i.e. on a board or other medium). The only time a background is needed is when the backside of the printing comes through the front (of the original) so you can see a shadow of what is printed on the other side. If that happens choose a background mount of a similar colour to what is showing through and place this behind the scan. This will probably not remove the shadows showing through, but it will reduce them.
- Have the scanner on your desk in front of you and place it so it is easy to get to from all sides. It can be a real pain having to stretch and reach to it all the time.
- If possible, scan in batches. Doing one offs wastes considerable time.
- When scanning, make sure you have the appropriate settings on the scanner so that we can insure that we have consistently good images.
- Paying attention to the original is important. Do NOT try to digitally amend an original. We tend to think in modern times that if something is not shiny and perfect that it is no good. This is not true. If an original is damaged then it should be scanned as well as possible, but not repaired digitally. Leave that to the end user. If they want to change or repair an image then it is for them to do it. In fact the charm of many artefacts is the condition of the thing rather than the content. Scan it as it is and archive it.
- Do not scale images (i.e. when a scan is done leave it at the size it is scanned out to), do not reduce (or increase) its physical or file size as that damages the image. The size of the scan is the way it should be archived.
- The scan resolution is all important. Make sure that you scan at the highest resolution the scanner will handle WITHOUT interpolation. The scanner technical documentation will tell you what its maximum scan resolution is. Interpolation is the scanner software guessing what the image will look like if the image is scanned in more detail. Remember, you cannot scan more detail than the image has. So a scanner cannot pick up more detail than its maximum resolution. So that is where you should be working.
- Make sure you scan at the maximum bit depth for colour photos. The bit depth will be a setting in the software. Do not scan at interpolated bit depths - again this is the software guessing about information that is not there in the image.
- Scan in RGB (unless you are doing a greyscale). Do not use CYMAK, this scan type will mean some image-data colour loss for photos to be presented on screen. CYMAK is a better format for conversion to pantone (printed format).
- Do not use bi-tonal scans even for newspaper. This format is for images that are digitally cleaned up and this format actually does that by discarding about five eighths of the background data to concentrate on the black and white contrast.

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Finally, the actual process of scanning:

- Make sure the glass is clean and the photos have not got any dirt or substance stuck on them that can be removed before you start (BEWARE OF GREASY FINGERPRINTS!).
- Handle the image carefully so you do not damage it, do not use originals that may cause damage to the scanner (like very big books or volumes) without extra support. If scanning images, use cotton gloves.
- Make sure the image is as straight as possible on the glass. Usually you can line it up on the side of the glass where a straight edge can be found. But this sometimes means that the image is too close to the edge. So for some small images, carefully (but non-permanently) mount the image on a larger background as an image and use that to get it straight (like an A4 piece of paper).
- Crumpled or damaged images with folds sometimes do not lie down properly. Again loosely mount them and then place a heavy book on the back of the mount to straighten them on the glass. Do not put them on the glass and then place an object or you will get crumples or, worse, make more crumples. Worse it will be very difficult to get them straight. A loose mount first will sort all that out and save lots of time.
- A simple loose mount can be produced by measuring the current image size. Then drawing a straight line to put line it up with on the mount sheet. Then take two strips of paper - one either end of the image so they are on the edge of the image but over the sides. Then tape down the strip so that the image is trapped between the strip and the background mount and is taped down but can be pulled out from under the strips. The tape does not touch the original that way and then image can be lined up with the background mount edge without guessing when it is upside down.
- Do NOT straighten images digitally after scanning. This is editing the image and is strictly NOT a proper representation of the original. The software also uses 'resample' techniques, which causes loss of image data from the original scan. As this project is about data preservation you cannot afford to lose data. If you cannot get it straight, then leave it slightly crooked for the end user to manipulate.
- Keep the image on the glass by properly closing the top before scanning. The reason for this is that it causes full light level the scanner needs to be reflected back into the scan box. If the top is open it will darken the image and cause a black surround on the image which increases the file size but causes the detail of the image edges to be lost and the overall image to be degraded. The scanner is designed to use the full light it generates. If you cannot close the top and areas of bare glass will allow the image to lose light around the edges then you should cut a mask out of a piece of paper. This way the image can be loosely mounted in the mask frame and the mask will prevent the loss of quality by light loss around the edges.
- Make sure the table you use is properly anchored and does not move when the scanner starts scanning. The mechanical movement inside the case does cause vibration and movement in the table and if the table is not stable then this causes a further back vibration that induces a loss of definition in the image the scanner picks up. The scanner should also not be disturbed by an external influence.

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## How to use Epson Scan

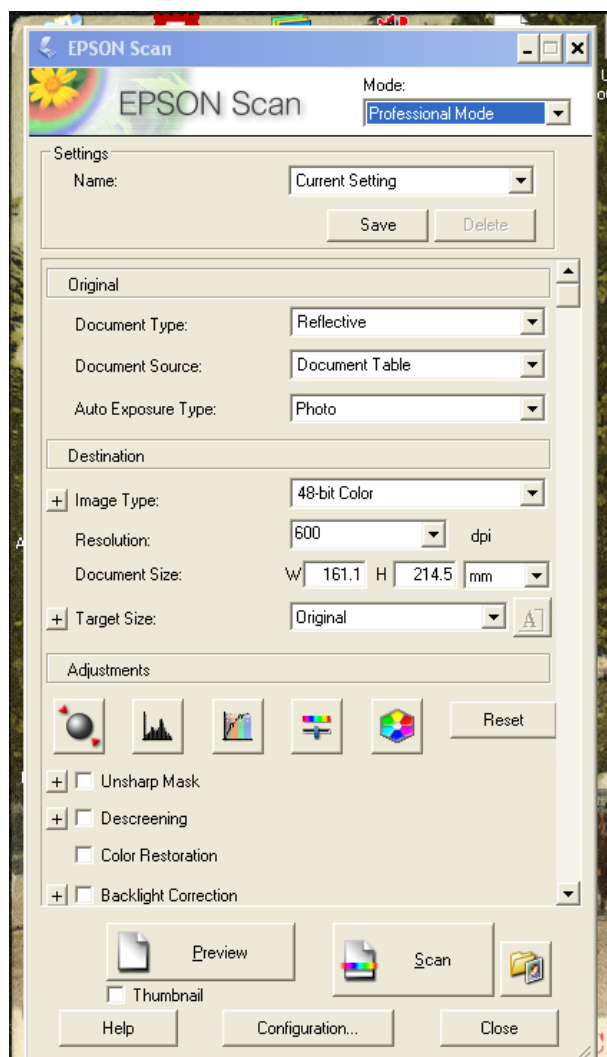
We scan material using Epson V850 PRO A4 scanners. The A4 scanner can process photos, slides, negatives etc. Both settings scanners use the Epson Scan software.

### ***Our standards***

We need to be aware of are a setting of a **24 bit colours** (even if black & white) and also that we use **no adjustment/filter/contrast settings** to correct the scan of the original. The only setting that may be used is the 'Advanced Image Correction: Black & White Points', as it does not influence the representation of the original (see 2.2.4). We scan to 600 dpi for standard sized images, such as photographs and medium glass slides, with contact prints, 35mm negatives and slides at a higher rate.

### ***3.2.2 Start-up and standard settings***

To start scanning, turn on the scanner before switching on the computer. Log onto the computer and open the Epson Scan. You should get a screen looking something like this:



Make sure the settings are as follows:

<i>Original Format</i>	<i>Attachment – kept in bottom right-hand draw of desk</i>	<i>Document type</i>	<i>Auto exposure</i>	<i>Resolution</i>
Photo	White spongy attachment on the top of the case	Reflective	Photo	600 dpi
Contact print	White spongy attachment on the top of the case	Reflective	Photo	1200 dpi
Pamphlet	White spongy attachment on the top of the case	Reflective	Doc	600 dpi
35mm Slide	No white spongy, use slide attachment	Pos Film	Photo	2400 dpi
Glass lantern Slide	No white spongy, use slide attachment	Pos Film	Photo	600 dpi
Negatives	No white spongy, use negative attachment	Neg Film	Photo	600 dpi


- & that you are using 24-bit Color and none of the adjustment boxes have been ticked.

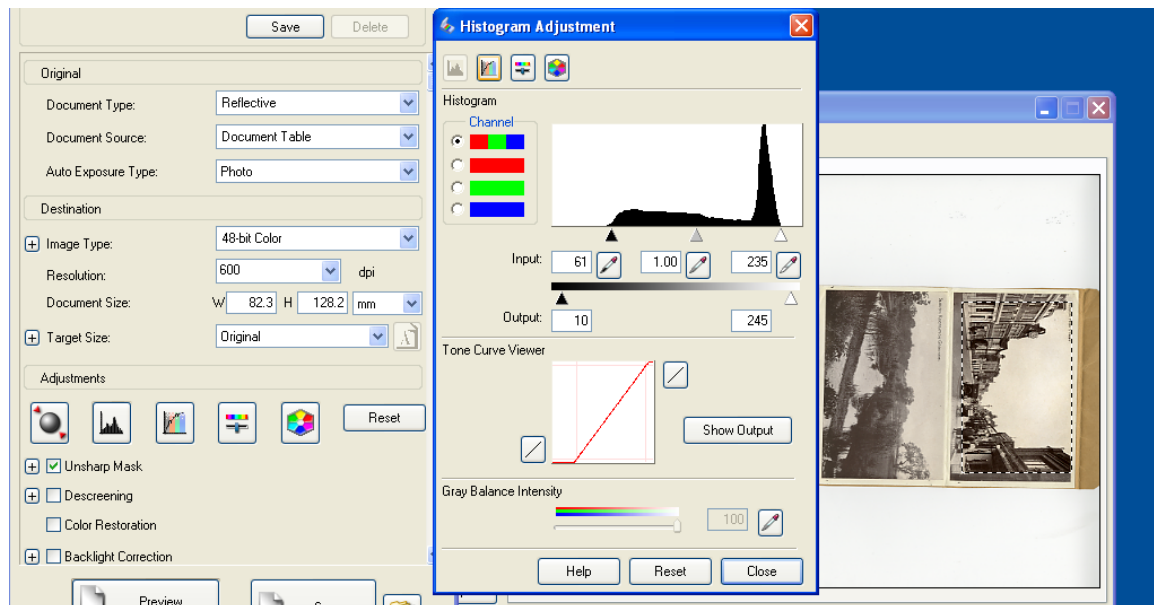
## Preview

To scan the image, you will first want to preview the image, so click on 'Preview'. The image will be displayed in the scanner window.

## Adjusting settings

You might want to adjust the settings. A 'correction' that can be used without effecting the representation of the original is the Black & White Points function. If you are scanning slides etc you can select the zoom display. To do that adjustment

- Draw a box around a representative selection of the image making sure you do not include any of the borders,
- then press the B&W button that looks like this: .
- When you click on this button a new task window will pop up with a histogram of black and whites used, like this:



- Under the histogram chart are three arrows. Move the black arrow to the beginning and of the reading and the white arrows to the end. The picture inside the box you drew earlier should be clearer. You can move the arrows slightly inside the chart if it makes the image clearer.

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Remember, the main focus of the images are the aircraft, however we also want to ensure that the image is still an artistic image in its own right.

- When you have the best image, you can extend the box so it includes all of the image. You can include material around the image as you can adjust it later.
- If you are scanning slides etc you need to go back to the “preview” display.
- Press scan and you will be asked to ensure the file is named correctly. See rules for creating a number in the cataloguing guidelines. The items should scan and save on the hard disc in “tif” format.
- Once the scan is complete a box should appear showing you the completed images and where they have been saved.

### ***Adjusting the image***

You need to check the image is cropped and straight. I suggest using the Irfanview programme which should be the default programme for viewing images.

If you feel the image is wonky you can rotate the image. Go to file-custom/fine rotation. You can then rotate the image clockwise and anti-clockwise by degrees until you are happy.

If you feel you did not select the outlines of the image precisely enough before scanning and you want to cut off unnecessary or oblique borders, you will need to ‘crop’ the image. To do this, draw a box around the image and then go to Edit-crop selection. You must include all of the image.

Occasionally, you may find that an image would be improved by a tighter crop or a different b&w setting not allowed above. If this is the case, you can create a second version of the image. The filename of the adjusted image should end -01.tif, e.g. if the original is T000002.tif, the second version would be T00002-01.tif.

### ***Aftercare***

The original image should be placed into the appropriate archive quality sleeve, labelled with the new item number using a permanent marker and filed away in the correct sized box.

Before they go home, staff will load your new images onto the cloud back-up servers.