

# How to scan old slides and then improve them

*These notes are based on a presentation Bob Davis and Graeme Eggins gave to members of U3A Northern Rivers (Australia) in September 2009*

SCANNING slides is a big project. It can take a lot of time.

Most 35mm slides, unless they have been kept in dry, light-free conditions protected from insect pests, will lose at least some of their colour and detail over years.

Typically 30- or 40-year old slides take on a pinkish look, the result of losing blue and green dye over time. You may also see blotches, discolorations, scratches and a build up of microscopic grime along the edges of the film stock.

Unfortunately even the most skilled scanner and complex software cannot make up from what was originally a badly over- or under-exposed colour photo.

In the worst cases you may get a more acceptable result by converting your colour slide to a black and white image.

## First, select and organise your slides

Go through your slides and decide which ones you really want to digitise.

If scanning a lot of slides spend a little time organising your slides — for example, grouping them by subject or years.

Later, once they are scanned and in your computer, you can put them in separate folders. Think of each folder as a separate photo "album."

## Next, clean your selected slides

Make sure your slides and the scanning surface are clean and dust free. Even the tiniest spec of dirt or smudge will look pretty awful when enlarged. Hold the slide by its mounting, being careful not to touch the surface with your fingers.

If you need to remove dust, do so with a blower brush, a tin of compressed air or a very soft photo brush. All are available from photographic shops and big chain stores.

Don't blow on a slide because you're likely to spray flecks of spittle on its surface that will be very difficult to remove without damaging to the slide.

If a slide is really dirty, wipe the non-emulsion side with a lint-free cloth slightly moistened with distilled water. Never use detergent. Wipe gently along the length of the slide. Don't apply cleaner in a swirling motion, as you can scratch the surface.

If all else fails, a specialist camera store may be able to clean it for you.

Note that you can tell the emulsion side of a slide by looking. If the scene is correctly oriented - not back to front - you're looking at the non-emulsion side.

Also check for loose film – mounts often become unstuck.

## What method will you use?

You have three choices in digitising your film slides:

1. Pay someone else to do it professionally
2. Use a digital camera to photograph each slide
3. Scan yourself using a scanner

## **1) Professional scanning**

Professional scanning is not that cheap. Typical on-line Australian prices range from \$A1.40 each for 15 or fewer slides down to 60c each for 100 slides or so. An average price appears around 80c each.

A master CD or DVD of your collection will cost an extra \$A10.

So say 50 slides would cost you about \$A50.

Also, be careful who you give your slides to. Keep in mind how valuable your images are to you. They could be lost or otherwise irreparably damaged so check if the scanning company will accept liability – it may not.

## **2) Take digital photos of your scans**

If you can borrow or make a light box, put each slide on it and photograph it at your camera's highest resolution. Your camera will need to have the ability to focus to within 3cm (say 1in) of the lens to copy a 35mm size film image.

Alternatively set up your old slide projector, screen, and tripod and digitally photograph your image as it is displayed on the screen. If there is a manual focus on your camera, use it to adjust for the distance to ensure the image is as sharp as possible.

Another option is to use a slide viewer with fluorescent backlight and photograph that image. Sometimes the peripheral light present around the slide itself needs to be blocked/blacked out with black paper or tape so that only the slide's image has any light visible behind it.

No matter what photographic method you use, you will get better results if you use a tripod and the camera's self-timer.

## **3) Use a scanner**

For most retirees, a scanner is the easiest way to digitise photographic memories.

You can buy a dedicated slide scanner or a consumer-level flatbed scanner with a slide attachment. (A consumer flatbed scanner is also useful for making photocopies or scanning old photos and documents).

Unless you intend digitising hundreds of slides, a top quality dedicated slide scanner is probably not worth the cost. However, as with computers, quality of scanners is rising as prices fall.

Whatever scanner you pick you can always use image editing programmes to fix up faults.

# **Step by step scanning**

Following a few simple steps can make all the difference in the quality of your slide or negative scan. Remember these tips (some taken from Australia's *Choice* magazine) as you begin scanning:

## **Check your software**

If you have a new scanner, take the time to install the corresponding software on your computer. Go through the tutorial it offers and properly calibrate the machine so that you can optimize the photo quality when printing from your computer.

If your software is already installed, double check that it is calibrated properly as well. Often this happens automatically every time you use it.

## **Place your slides correctly**

Depending on your scanner, you'll need to place the slide in a holder or in a particular position on the scanner's surface. It's important to pay attention to these instructions because the scanner software will 'expect' to find the slide in that particular place.

For example, in some scanners you need to place the bottom of your slide on the RHS of the holder.

Always let the scanner lamp warm up for the recommended time - the light colour changes as the lamp's temperature increases which can make a difference to the quality of the scan.

Make sure you place the slide **correct side up** - the emulsion side should be facing the light source, which is usually in the lid of a flat-bed scanner or the slide scanning attachment.

If you get it wrong you can reverse the image later using image manipulation software, but you risk reducing the quality of the scan.

Most 35mm slides are mounted in plastic or cardboard, which means they sit just above the scanner's glass plate.

If you can take the films out of the mounting without damaging them, you may get a better result because the scanner's lens is usually focussed on the top of the glass plate and anything above it will be out of focus.

### **Select the right settings**

Select "colour transparency," "film" or an equivalent as the source material in your scanner's software. In general, the only other setting you're likely to see for transparencies is 'colour negatives' which are quite different.

In addition, negatives contain a reverse image, so a slide scanned on this setting will be pretty useless - unless you're looking for special effects.

### **Sharpen things up**

To help compensate for the scanners' tendency to produce slightly out of focus (soft) images, scanner software often uses a 'sharpen' effect by default for slides.

However, if you have the choice, select 'Unsharp mask' rather than 'sharpen'. It will give a better overall result for photographs.

If you overdo it the first time, you'll need to fiddle with the settings until you find one that seems to work for most scans.

Simple sharpening is usually most effective when applied by the scanner software, but you can also sharpen using image manipulation software after the scan is complete

### **Check the resolution**

When scanning your photo slides and negatives, it is crucial to scan at the right resolution (at least 1000 dpi) to get a quality digital image or print later on.

You can scan at a lower resolution if you only ever intend to print postcard size photos of your slides. But if you hope to print 8x10 prints scan at the highest possible resolution.

Scanning at a higher resolution – say 5000dpi - takes more time and creates larger image files, but the quality and detail of each scan will be much greater.

You can always reduce its size in future, but you can't add more detail once the scan is complete without degrading image quality.

### **Choose a format**

**JPG** is probably the best output format for most amateurs. While it's true that jpgs are compressed, as opposed to a file format like TIFF, for most people jpgs will be an acceptable trade-off between quality and file size.

TIFFs can take 10 times the amount of space on your computer as jpgs, even for the same image.

Professionals, however, will probably prefer TIFFs. So will people who want to archive their scans so that in future, they may be converted to another format as yet uninvented.

## Clean the scanner glass frequently

Clean the scanner surface after every 50 scans or so with a lint-free cloth..

## Save your images under meaningful names

Be sure to name your images in a systematic way — e.g. "2009 US holiday\_Bob.jpg" as opposed to "bob127.jpg".

## Editing your photos

Invariably scanners come with software to help restore faded colour and adjust colour and brightness. The software may be pre-installed in the scanner or may be come ready for installation on your computer.

Learn how to use your scanner software by reading the instructions and practising till you are comfortably with it.

You will probably get superior results by using specialist imaging software such as **Photoshop Elements** and **Paint Shop Pro** which offer layer manipulation.

Free downloadable programmes like **PhotoScape** are also useful, specially in adding special effects.

## Editing order

Most scanned slides or old photos benefit from some editing. Try to do it in this order:

1. Save your original image. Make a copy – this becomes your working file. If you mess it up, you can always make a new copy of the original
2. Rotate the image if required to ensure the horizon is horizontal
3. Crop to the essentials. This is a good time to crop out grimy borders.
4. Adjust lightness, darkness and contrast levels if required
5. If needed, correct colours and increase saturation (i.e. render the photo in more vivid colours)
6. Repair faults such as spots, scratches or insect damage using software tools like the clone stamp.
7. Vignette and/or add borders if desired
8. Sharpen the finished image (but don't over do it)

NOTE: Most programmes, including the one which came with the scanner, allow you to remove dust and scratches. Use this tool carefully as it works by blurring the background – you may think you lose too many details.

Colour correction is often required once a slide has been scanned.

Though old slides often look pinkish, they did not become redder over time. Film contains Cyan (blue-green), Magenta (violet) and Yellow dyes, all of which will fade over time, particularly Cyan. The fading means that details can be lost for ever.

Too much Red is actually too little Green and Blue - those two colours have faded.

If you have a graphic editor that offers you a histogram don't use the Master Channel (which is the composite of all three RGB colours). Instead use the individual RGB channels to correct colours.

Move the pointers inwards. Clip the dark end of red first with the Black Point somewhat (large percentage, but few pixels). This darkens the colour, reducing the luminance by shifting the red mid tones toward the zero end. Darker is less red intensity.

Then make the Green channel adjustment. Your photo may be too green after this, but remember that adding blue and green in more or less equal amounts will offset the red. Setting the White Point to be about mid point brightens green substantially.

The Blue channel adjustment brings the overall colour into balance.

Overall, your eye is your best guide. Move the sliders for each colour till you get the best result overall.

The more time you put into making adjustments on each slide, the better the result.

Good luck!