Turning History into Pixels by Murray Adams
Mornington Peninsula Shire Local History Digitisation Officer.
(Presentation summarised by Heather Arnold)

Murray is a photographer and was a member of the Police force for many years. He now works with the eight historical societies on the Mornington Peninsula as the Local History Digitisation Officer. His alternate title for this presentation is 'Why do we need computers in our Museums when everything else is old?'

Why Digitise:
- Preservation of the originals
- Development of technical infrastructure such as iPad, iPhone means more opportunity to view digital copies
- Access - potentially world wide
- Economic advantages i.e. you can sell your photos
- Reduce handling of the originals
- Backup copies

How to digitise
Naming
The naming protocol Murray uses is State, Museum Code, item type code and running number - thus VRYE P123 is V for Victoria, Rye - the museum code for the Rye Historical Society, P for Photo and 123 is the 123rd photo digitised.

[A note on Museums Codes: they need to be registered, you can't just make them up. They are issued by the National Library of Australia and you can't use a code that is already in use (thus Drouin and Dromana can't both use DRO as their code) Follow this link to more information about Museum codes https://mavic.asn.au/services/advice]

Here are the item codes Murray uses
P - Photograph
A - Archive/ Document
O - Object
L - Library book.

Digitising

Preservation Copy
Captured as a high resolution TIF file

Access Copy
Converted to JPG file (high resolution)

Thumbnail Copy
JPG file compressed to 72ppi

Digitisation is both labour intensive and expensive, so it is important to capture the image in a way that makes it possible to use it to serve several needs. Do it once and do it properly.

Scan item as a TIF at a minimum of 300ppi, in the first instance. This is the preservation copy.
Then create an Access copy i.e. resave the TIF as a high-resolution JPEG.
Then create a Thumbnail copy i.e. resave the JPEG to 72ppi.

PPI means Pixels per Inch

Left: Image: Murray Adams.

These are the resolutions Murray scans at for various item types

Material Type	File use	Resolution	Colour space	File format	Other
Printed text – eg. Book	Preservation	300ppi	RGB – 24 bit colour	.tif (each page)	
	Access	300ppi		.jpg	Create searchable PDF
	Thumbnail	72ppi		.jpg (cover only)	
Photograph	Preservation	300ppi >A4 600ppi A4-A6 1200ppi < A6		.tif	
	Access	300ppi >A4 600ppi A4-A6 1200ppi < A6		.jpg	
	Thumbnail (e.g. for web or catalogue)	72ppi		.jpg	No bigger than 800x600 pixels
Map	Preservation	600ppi		.tif	
	Access	600ppi		.jpg	
	Thumbnail	72ppi		.jpg	
Newspaper	Preservation	300ppi		.tif (each page)	
	Access	300ppi		.jpg	Create searchable PDF
	Thumbnail	72ppi		.jpg (1st page only)	
Object/Artwork	Preservation	Maximum allowable on camera		.tif (converted from jpg if necessary)	
	Access	600ppi		.jpg	
	Thumbnail	72ppi		.jpg	No bigger than 800x600 pixels

Image: Murray Adams

Comparison of files produced from a single "TIF" scan:

TIF (hi-res) = 45.55Mb
TIF – LZW = 24.89Mb
JPG (hi-res) = 8.69Mb
JPG (72ppi) = 243Kb

This shows you how the file size differs depending on the way the image is scanned and then saved. An LZW TIF is from the name of the inventors – Lempel, Ziv and Welch. Here's a link to a technical explanation if you are interested https://www.geeksforgeeks.org/lzw-lempel-ziv-welch-compression-technique/

Image: Murray Adams

Difference between a TIF and a JPEG

Murray explained it this way. A TIF (also called a TIFF) contains all the information, a JPEG is a precis of the information.

A (original) TIFF	On Monday the weather was sunny On Tuesday the weather was sunny On Wednesday the weather was sunny On Thursday the weather was rainy On Friday the weather was sunny On Saturday the weather was sunny On Sunday the weather was sunny			190 (100%)
B (lossless) TIF - LZW	1 Mon2 3 4 1 Tues2 3 4 1 Wednes2 3 4 1 Thurs2 3 5 1 Fri2 3 4 1 Satur2 3 4 1 Sun2 3 4	whereby	Lookup Table: 1 = On 2 = day 3 = the weather was 4 = sunny 5 = rainy	57+39=96 (50%)
C (lossy) JPG	**Last week, the weather was mostly sunny**			33 (18%)

A is the original text, taking up 190 characters, without counting the blank spaces.
B Because there is a lot of repetition, we can create a "Lookup Table" of the most frequently occurring terms. This will reduce the content to only 57 characters, or 96 characters when including the Lookup Table – a 50% reduction. You can go back from B to A without any loss in quality, hence the term "**lossless**".
C Captures the spirit of A and you can go from A to C, but not from C to A because there is no way of finding out from C which day of the week was rainy. Only 33 characters are needed – an 82% reduction – but some information is permanently lost, hence the term "**lossy**".

Image: Murray Adams

What can you digitise?

You can digitise anything – all you need is the right equipment
- Photos
- Documents and maps
- Posters
- Slides
- Objects
- Sound, film and video
- Books

Equipment

Murray uses an Epsom A3 flatbed scanner, a Fujitsu SV600 overhead scanner, a camera for objects and has various other amazing equipment. The two images below show his office setup, with the A3 scanner and his computer setup; the other image shows some of the other equipment. The Super 8 film converter photographs every frame of a Super 8 film and saves it to an SD card. Here's some more information on it. https://www.bhphotovideo.com/c/product/1371442-REG/wolverine_data_f2dmmpro_moviemaker_pro_8mm_and_super_8.html

Mornington Peninsula Local History Digitisation Officer's "office" at the Sorrento Museum

Images: Murray Adams

Enhancing or altering images

Adobe Photoshop can be used for 'cleaning up' images. Word of warning - you do not Photoshop your TIF or preservation image. You do all the work on the JPEG image and then resave. You might want to resave as 'VRYE P123 enhanced' or 'VRYE P123 cropped' or whatever term you want to use. That means that you can distinguish between altered images and the original.

This is an example of how Murray 'cleaned up' a photo by taking out the creases etc in the image

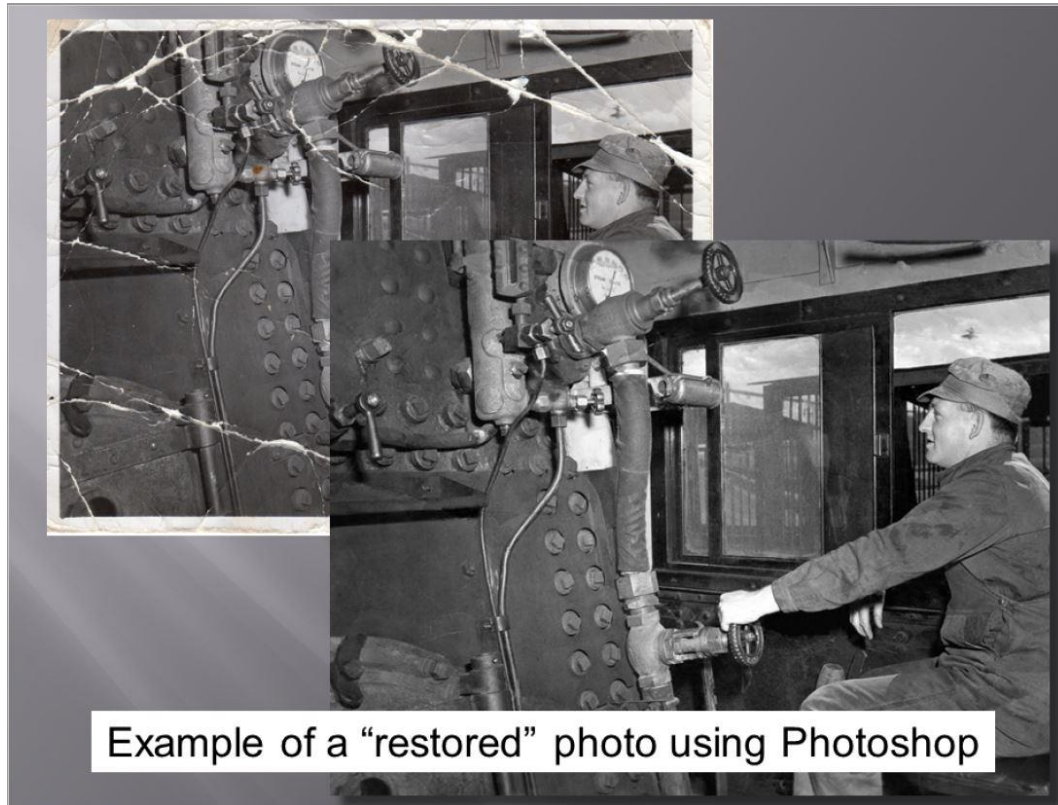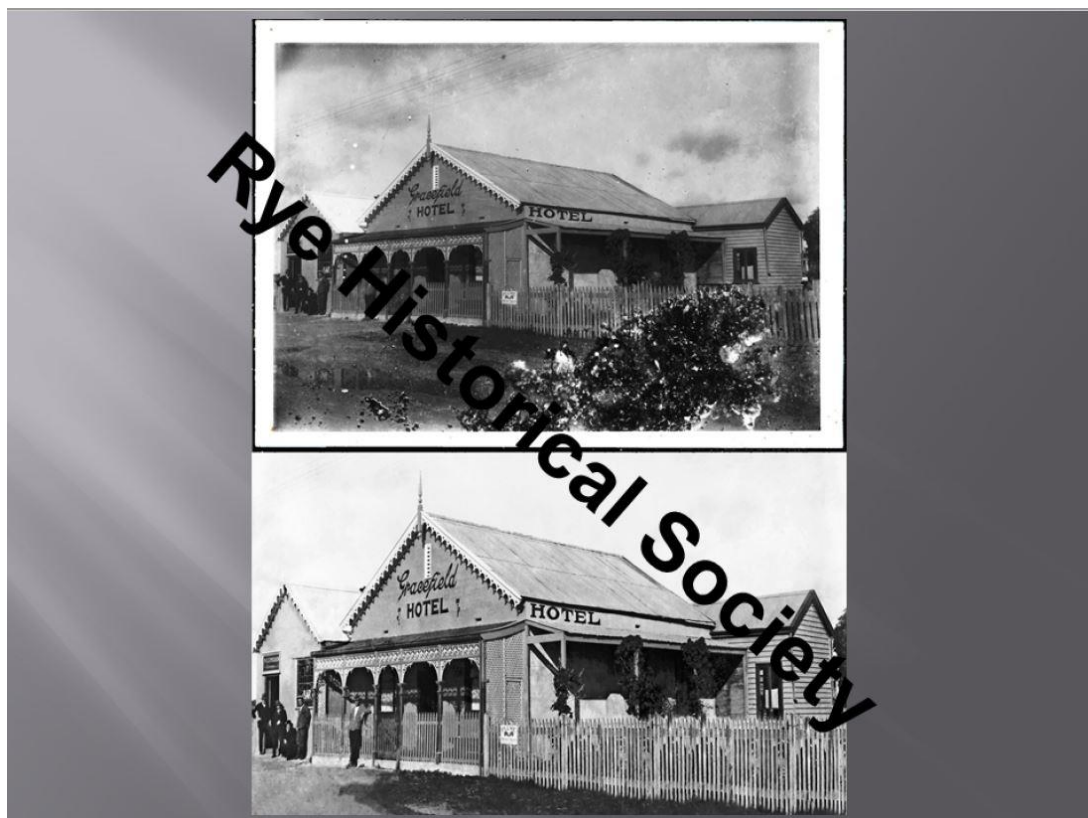Example of a "restored" photo using Photoshop

Image: Murray Adams

This is an example of how Murray improved the original image by changing the brightness and taking out the damage in the lower right by extending the fence line by photoshopping and creating a good aesthetic result.

Image: Murray Adams

Backup
Backup - the golden rule of back up is 'more than one copy in more than one location.' You have a copy on your computer, you should also have a copy somewhere else - an external hard drive or USB kept in another location or Cloud storage.

Other software
As well as Photoshop Elements, Murray uses Microsoft ICE - Image Composite Editor https://www.microsoft.com/en-us/download/details.aspx?id=52459 this 'stitches' or combines images together. Murray scans documents of all sizes on his A3 scanner, he then 'stitches' them together using ICE.

Watermarks
You can add watermarks to photos through Photoshop or Paint or Irfan View etc. The image below from Murray, shows various examples of watermarking with either text or an image. The photo at the top left has had the logo from the Sorrento Museum added.
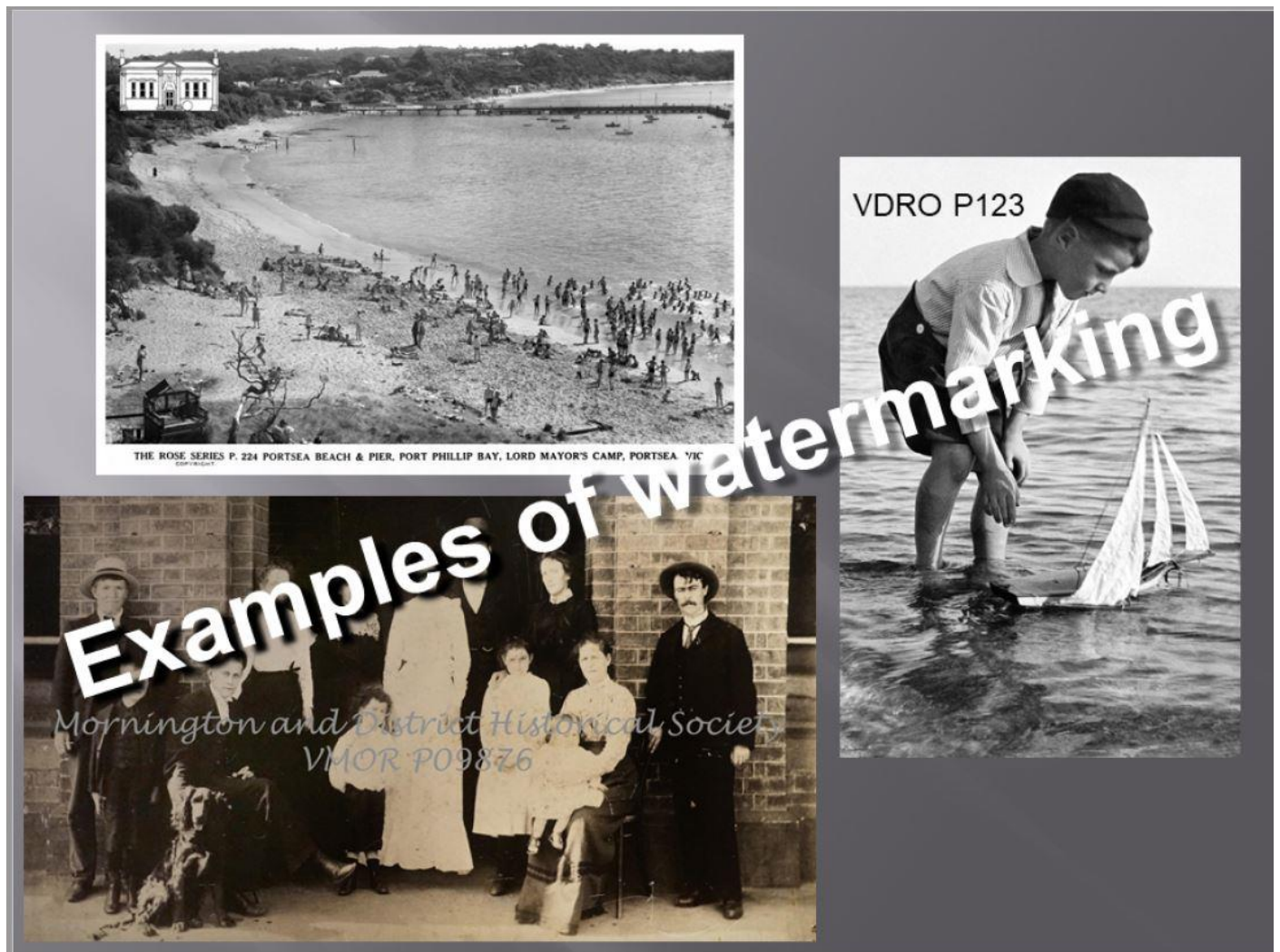

Image: Murray Adams

George Rose

Murray also spoke about George Rose (1861 - 1942). George, who was born in Clunes, was a photographer and the founder of the Rose Stereograph Company, who produced 1000s of postcards of Victoria. In the 1970s, the Company gave the State Library of Victoria 14,000 glass plate negatives. Many of these have been digitised and are available on the State Library of Victoria website www.slv.vic.gov.au

George had a mobile darkroom which he lived and worked in whilst travelling around the countryside. It was a Fargo bus chassis with a DeSoto engine. His darkroom is shown, below, as well as two examples of the work of the Rose Stereograph Company or Rose Series postcards as they are also called.

George Rose's mobile darkroom.
State Library of Victoria Image H2006

THE ROSE SERIES P. 14139   A PRETTY CORNER, MARYSVILLE, VIC.

THE ROSE SERIES P. 1637   COMMERCIAL ROAD, MORWELL, VIC.

Above: A Pretty Corner, Marysville.
State Library of Victoria Image H32492/8935

Left: Commercial Road, Morwell.
State Library of Victoria Image H32492/2350