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Archival Photo Printing, Fine Art Giclee & Canvas Reproductions
A guide to creating digital fine art prints from film, prints, artwork and digital files: 18 August 2005

1. The development of 'Archival' digital photographic printing...

1987: The year of the Mac II computer with 16.8 million colours. As consultants to Village Roadshow we would image photo files from 'PixelPaint' (No PhotoShop software in those days) onto film using digital film recorders and make lab prints - it was very slow and expensive.

1990: We installed Sydney's first Kodak Dye Sublimation 'Photo Quality' printer The $40,000, 85kg, monster produced beautiful 10"x10" prints but only at 205dpi. Images faded in bright light after a year or so and the images sometimes 'melted' in PVC photo albums!

1993: Brought the $45,000 Fuji Pictrography thermal dye transfer printer with stunning 400dpi photo output. Fortunately digital files last forever because the Fuji prints lasted about 2 years. Beware there are still some labs using these machines! Good quality but not archival permanence.

1996: Saw the first Epson Stylus Photo Inkjet printers - Affordable A4 and A3 output but we had faded green prints after one to two WEEKS in bright light. The printers sold like hot cakes, regardless, and the technology progressed...

Now: We have now seen inkjet technology progress past 'Long Life Dye' and 'Outdoor Signage Pigments' (Pre Faded!) until we finally have 'Wide Gamut Archival UltraChrome Pigment' printers. These use microscopic droplets of oil paint encapsulated in resin to print at true photo quality onto photo papers and fne art media. 'UltraChrome' printers are approved by museums for fine art, 'Giclee' printing. UltraChrome colour prints on acid free paper are fade free indoors for over 70 years, 150 years or more for black and white and prints on canvas media are true 'Oil Paintings'.

2. A full range of print services...

Display Prints & Posters: We use a 160gsm medium weight semi-gloss resin coated paper and medium resolution, fast print settings to provide superior indoor display prints at a cost effective price.

Archival Photographic Prints: We use resin coated 250gsm heavyweight lustre and gloss papers and the highest resolution print settings for 'Exhibition' and 'Museum Quality' archival prints.

Fine Art Prints: We use a range of heavyweight smooth, textured, coated, uncoated, PH buffered and acid free papers and unbleached rag papers for limited edition reproductions. This service is ideal for 'Limited Edition' reproductions of watercolour, pastels, charcoal, pencil, ink and acrylic art.

Canvas Prints: We use heavyweight premium cotton, medium weave canvas with semi-gloss and matt surface finishes. The ideal application is for limited edition reproductions of oil and acrylic art but we can print photographic images and 'painter effect' photo imagery also.

3. What we can make prints from...

Artwork, montages, textiles, scrapbook pages, digital camera files, photographs, negatives, slides...

Scans & Digital Camera Shots: Ideally we need RGB (Red, Green & Blue) files of at least 12Mb - the same size as a 5 MegaPixel Digital Camera. If your files are smaller we can use special software to increase the size of the image. Use the lowest 'JPG' compression setting on your camera or use TIF. If your camera produces 'RAW' files we can process them for you. With scans set up your scanner to enlarge the print or film to the final print size at 150 to 300dpi (See the info below).

Digital Art & Montages: If you are starting from scratch set up your digital 'canvas' at the actual final print size at the following ppi (pixels per inch): A4 and A3 prints need 300 down to 200ppi. A2 can be 200ppi down to 150ppi. A1 and larger can be 150ppi down to 100ppi or even 75ppi. The larger the print the longer the viewing distance needed to 'take it in' - A print 1m wide across the room only appears as big as a postcard held a few cm away!

3. What you can supply to get prints made - *Continued...*

Photographic Prints and Artworks: We can scan or 'digitise' any 2D media, photographs, mounted and unmounted art even prints in glass picture frames if they can't be removed. We have built a Digital Reprography system using a huge copy stand, a $46,000.00 high resolution digital copy camera and diffuse daylight balance lighting. This unique system can be used to digitise reflective originals from postage stamp size up to A2. A larger system digitises mounted art & paintings up to 1m x 2m. Diffuse, daylight balance lighting ensures colour fidelity and reduces the texture of canvas and watercolour surfaces of the original art so that we don't print a 'picture' of the texture on top of our textured art paper and canvas. Print scanners can not do this!

Photographic Film & Glass Plates: We have been scanning film on our $400,000.00 Kodak Pro Photo CD system and other specialised scanners since 1992 and have now done over a million scans! Our scanning clients include Lucasfilm - All the production stills and marketing shots for Star Wars Episodes II and III were scanned and distributed Kodak Pro Photo CD.

If you have an original colour or black & white negative, transparency, slide or old glass plate we can get the most amazing detail compared to scanning a reduced quality print made from it. We can scan or digitise any film format: 16mm, APS, 35mm; half and full frame, panoramics, medium format roll films and sheet film up to 8" x 10". We can digitise all lantern slides formats and glass plates up to 11"x14"

4. Retouching and photo restoration services...

Photographic Film: We have scanning systems that automatically remove or reduce dust and small scratches and this is included in the scanning fee. Badly scratched film can be retouched by quote. We NEVER use any oils or coatings on film to 'fill-in' scratches as it can damage old, fragile emulsions. We don't use high speed drum scanners as old film is often warped and it can get destroyed when spinning at 10,000 rpm!

Photographic Prints: Our scanning service fees includes basic contrast enhancement and dust reduction. Old photos, no matter how good they look at first glance, have tiny imperfections like creases, abrasions, stains, foxing and silver leeching. These become a real issue when enlarging 4x or more and usually require professional retouching and sometimes special lighting during digitisation. We inspect and quote.

Artwork: It sounds odd to think of artwork needing retouching but artists often ask for their signature to be removed form the image so they can hand sign and number each limited edition print. We often remove borders and background colours back to pure white so that we can print on tinted art paper. Wide borders the same colour and texture as the background paper can be created to create space around art.

IMPORTANT: All our digitisation and restoration processes are 'Non Destructive'. Copy lighting is heat free. Fragile emulsions and print surfaces are never touched or compressed under glass. All retouching is performed on the digital file by mature digital artists. Your original is always returned as we received it! We have been doing restorations since the pre-digital '60's using photographic and airbrush techniques!

5. Image optimisation, manipulation and digital effects...

Image Optimisation: We have very expensive pre-press monitors on accurately calibrated Mac and Windows systems. When we open a file you supply we can 'Soft Proof' the image onscreen to show almost exactly how it will print. In a few minutes we can 'optimise' the contrast and density, remove any colour casts, fix up dark areas - even add a little density and saturation to washed out areas. Our clients rely on our skills and discretion to make their prints look the best. If major fix-ups are needed we will eMail a low resolution proof for approval. All optimised files can be supplied as 'Digital Masters' with print notes on CD.

Image Manipulation: As opposed to photo restoration: We have very skilled artists - one who has worked in Hollywood for 15 years producing move posters and cosmetic make-overs. We can replace bad backgrounds, change colours, superimpose, remove double chins, wrinkles and age spots, whiten teeth and add a sparkle to the eyes etc. All work is quoted and can be proofed and approved on-line

Painting Effects Filters: We have one main policy here, "You are the artist!" Yes we could add all manner of PhotoShop digital filters to make a snap of the family cat instantly look like a Van Gogh masterpiece but we prefer to leave that to your own talents and discretion. You can have fun experimenting with sophisticated but low cost software (Photoshop Elements etc.) and have gained the personal satisfaction of creating your own image effects!

Artist's Make-over: Simply printing a photographic image onto canvas does not instantly turn it into a piece of art - it is just a photograph on canvas! Unless the image has 'painterly' lighting or 'atmosphere' it is lacking something special. Turning the image into 'Splatters' and 'Blobs' with a digital filter just doesn't do it!

We have an associate who has worked closely with the developers of 'Painter' software and Wacom Graphics tablets. He is a traditional illustrator and provides us with a service where he digitally reworks a photograph by 'hand painting' textured brush strokes into the image. It is not a quick effect and it is not inexpensive but it IS true art! Please call us for more details.

6. Print borders for various display options...

Borderless Photo Prints: We can print your images right up to the edge of the paper if that is what you want. 'Machine' prints are supplied this way but have you ever noticed though how much the image is cropped? Borderless images HAVE to be printed bigger than the final paper size so that trimming does not leave any white edges behind. We produce borderless photographic prints at standard 'A' sizes for the standard price - just remember you will lose a little of the image edges and they can be hard to frame.

Thin Photo Print Borders: We recommend a traditional thin white border (3-5mm) so that the entire image is displayed without cropping. We produce bordered photographic prints by default.

Wide Art Borders: Watercolour art often works well with a wide border so that the image does not look 'cramped' in the frame or the matte overlay. The size of this border is an aesthetic decision made by you - the artist. It should, however, be the same colour and texture as the background paper in the image. If the original art has little or no border we can use retouching to extend the background as a seamless border so you don't get an ugly white area around the image. We quote on adding wide borders to watercolour images as it may involve retouching work.

Framed Canvas Borders: Canvas is unique as it needs to be 'stretched' over a wooden frame to remove wrinkles. If the image is an old painting, traditional art or a classic portrait it will probably look best with a traditional frame. If so all you need is a border wide enough to wrap around the edges of the 'stretcher' for side stapling - Say 50mm all (Adding 100mm total to your chosen image size). Bear in mind that the chosen frame may obscure up to 10 - 15mm of the image edges.

Wrapped Canvas Borders: A big trend at the moment is the 'Canvas Wrapped' style for home and office Decor with the canvas and often the image itself appearing to be 'Wrapped' around a stretcher giving the appearance of a block. To do this we make a print that incorporates a 70mm border: 40mm runs down the side of the stretcher and 30mm wraps around the back for hidden stapling.

Some artists 'extend their abstract artwork or backgrounds 40mm all around to allow for the block side sides: A 600mm square artwork is painted as a 680mm square original (600mm + 40mm + 40mm). When the canvas reproduction is printed at 100% and wrapped around a 600mm stretcher the image 'wraps' around the frame and appears like a solid block 40mm deep. You don't have to extend and 'wrap' the image - you can have plain white 40mm sides and still get the block look. If you have an image that has important details right up to the edge of the frame we have a few retouching tricks to add extra image and extend the background 40mm for wrapping if required.

7. Canvas border options...

What we do to help: We add an extra 70mm border to all canvas reproductions for FREE - your canvas will be 140mm (5.5inches) wider and taller than ordered size to allow for stretching.

You can choose to leave the 70mm border blank for stretching without compromising the chosen image size or print part of it to take the image around the stretcher sides. This is how it works...

1. Choose to leave the whole 70mm canvas border blank for block wrapping...
   40mm of blank canvas will go down the side of a 40mm stretcher displaying white sides.
   30mm of blank canvas will go around the back of the stretcher for hidden stapling.
   Canvas will have the image the same the size as ordered and the frame will have traditional blank canvas sides.

Typical 24" (600mm) square image with the 70mm border added.

The image fills the front of a 24" stretcher.

The 40mm stretcher sides show blank canvas

The grey line is where the canvas goes around the back of the stretcher for stapling.
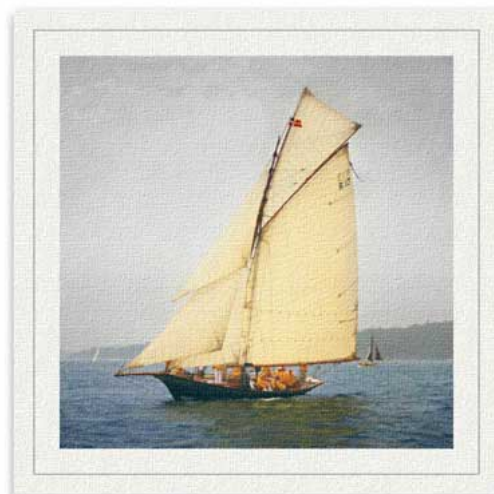

Image appears on front with 40mm blank canvas sides

2. We can print the image 40mm bigger on all sides so that it 'wraps' around the stretcher frame...
40mm of extra image will go down the side of a 40mm stretcher displaying a 'wrapped' image.
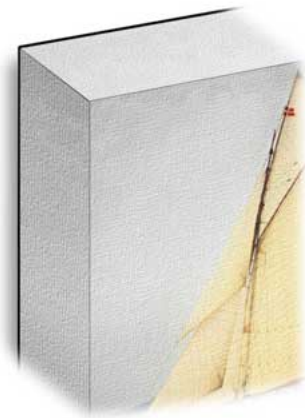30mm of blank canvas will go around the back of the stretcher for hidden stapling.
Canvas will have the image enlarged 80mm in width and height to wrap the image around the frame sides.

The grey line is the front of the stretcher showing a 24" (600mm) square section of the image.

The original image is enlarged to fill the area at the sides of the stretcher

The 40mm stretcher sides show the extended image

The blank border is where the canvas goes around the back of the stretcher for stapling.

Whole Image enlarged to extend around the sides

3. We can print a matching colour 40mm on all sides of the image to add a classic border...
40mm of coloured area will go down the side of a 40mm stretcher displaying a coloured sides.
30mm of blank canvas will go around the back of the stretcher for hidden stapling.
Canvas will show the image the same the size as ordered with coloured canvas wrapping around frame sides.

The 24" (600mm) square image has a colour matched 40mm border added

The image fills the front of the 24" stretcher.

The 40mm stretcher sides show coloured canvas

The blank border is where the canvas goes around the back of the stretcher for stapling.

40mm Sides filled with complimentary colour

4 We can retouch the image to extend background 40mm on all sides to 'wrap' around the frame...
40mm of extra image will go down the side of a 40mm stretcher displaying a 'wrapped' image.
30mm of blank canvas will go around the back of the stretcher for hidden stapling.
Canvas will have the image retouched 80mm to make more background to wrap around the frame sides.

The grey line is the front of the stretcher showing the original 24" (600mm) square image.

The original image is retouched to extend the background by 40mm on all sides

The 40mm stretcher sides show extended image

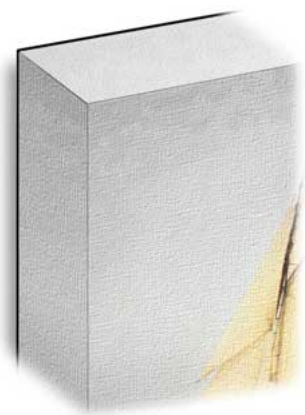The blank border is where the canvas goes around the back of the stretcher.

Image retouched outwards to extend around the sides

8. An extensive range of print and canvas sizes...

We print up to 44" (1.12m) wide roll and a maximum length of 3m. Many clients 'gang up' multiple images in a big layout and order by roll lengths - like fabric! Most people, however prefer to use standard ISO 'A Sizes' so here they are for your reference...

A6	110mm	x	149mm	-	4.3"	x	5.9"	Quarter page
A5	149mm	x	210mm	-	5.9"	x	8.3"	Half page
A4	210mm	x	297mm	-	8.3"	x	11.7"	Full page
A3	297mm	x	420mm	-	11.7"	x	16.5"	Double page spread
A2	420mm	x	594mm	-	16.5"	x	23.4"	Small poster
A1	594mm	x	840mm	-	23.4"	x	33.1"	Poster
A0	840mm	x	1119mm	-	33.1"	x	46.8"	Large poster

9. Film & digital camera image sizes when enlarged onto standard 'A Size' media...

Quite often we don't realize how much blank space is left on 'A' format pages when images are printed from square or odd shaped camera formats - A real problem if you have bought a standard sized frame! This list shows the real image sizes when film and digital camera files are enlarged onto standard media. Just choose the format of your original film / digital camera and read off the image sizes underneath...

35mm Film - Standard: Mounted slides & film frames 24mm x 36mm. Proportions are 2:3...
Image size on A4: 198 x 297mm. **A3:** 280 x 420mm. **A2:** 396 x 594mm. **A1:** 560 x 840mm. **A0:** 792 x 1188mm.

Consumer 'Point & Shoot' digital cameras: Proportions are 3:4...
Image size on A4: 210 x 278mm. **A3:** 297 x 396mm. **A2:** 420 x 560mm. **A1:** 594 x 792mm. **A0:** 840 x 1120mm.

Latest 'WideScreen' Digital cameras: Proportions are 9:16...
Image size on A4: 167 x 297mm. **A3:** 236 x 420mm. **A2:** 334 x 594mm. **A1:** 473 x 840mm. **A0:** 668 x 1188mm.

35mm Film - 6cm panoramic: Film frames 24mm x 56mm. Proportions are 3:7...
Image size on A4: 127 x 297mm. **A3:** 178 x 420mm. **A2:** 254 x 594mm. **A1:** 360 x 840mm. **A0:** 509 x 1188mm.

35mm Film - X-Pan Panoramic: Film frames 24mm x 64mm. Proportions are 3:8...
Image size on A4: 111 x 297mm. **A3:** 158 x 420mm. **A2:** 223 x 594mm. **A1:** 315 x 840mm. **A0:** 446 x 1188mm.

120 Roll Film - 6cm x 4.5cm (6-4-5): Film frames 56mm x 42mm. Proportions are 3:4...
Image size on A4: 210 x 278mm. **A3:** 297 x 396mm. **A2:** 420 x 560mm. **A1:** 594 x 792mm. **A0:** 840 x 1120mm.

120 Roll Film - 6cm x 6cm (6-6): Film frames 56mm x 56mm. Proportions are 1:1...
Image size on A4: 210 x 210mm. **A3:** 297 x 297mm. **A2:** 420 x 420mm. **A1:** 594 x 594mm. **A0:** 840 x 840mm.

120 Roll Film - 6cm x 7cm (6-7): Film frames 56mm x 68mm. Proportions are 14:17...
Image size on A4: 210 x 254mm. **A3:** 297 x 361mm. **A2:** 420 x 510mm. **A1:** 594 x 721mm. **A0:** 840 x 1020mm.

120 Roll Film - 6cm x 9cm (6-9): Film frames 56mm x 80mm. Proportions are 7:10 (NOT 2:3)...
Image size on A4: 208 x 297mm. **A3:** 294 x 420mm. **A2:** 416 x 594mm. **A1:** 588 x 840mm. **A0:** 832 x 1188mm.

120 Roll Film - 6cm x 12cm (6-12): Film frames 56mm x 112mm. Proportions are 1:2...
Image size on A4: 149 x 297mm. **A3:** 210 x 420mm. **A2:** 297 x 594mm. **A1:** 420 x 840mm. **A0:** 594 x 1188mm

120 Roll Film - 6cm x 17cm Panoramic (6-17): Film frames 56mm x 168mm. Proportions are 1:3...
Image size on A4: 99 x 297mm. **A3:** 134 x 420mm. **A2:** 198 x 594mm. **A1:** 278 x 840mm. **A0:** 396 x 1188mm.

4" x 5" Sheet Film (4-5): Film frames 96mm x 120mm. Proportions are 4:5...
Image size on A4: 210 x 263mm. **A3:** 297 x 371mm. **A2:** 420 x 525mm. **A1:** 594 x 743mm. **A0:** 840 x 1050mm

10. Traditional photographers imperial print sizes...

We photographers have our own standard exhibition sizes, measured in inches, which are a legacy of the old glass 'Plate' camera formats - some have evolved from the 'New' 2:3 ratio 35mm format...

4" x 5"	102mm	x	127mm		4" x 6"	102mm	x	153mm	35mm Full frame		
5" x 7"	127mm	x	178mm		6" x 9"	153mm	x	229mm	"	"	"
8" x 10"	203mm	x	254mm		10" x 15"	254mm	x	381mm	"	"	"
11" x 14"	279mm	x	356mm		12" x 18"	305mm	x	457mm	"	"	"
16" x 20"	406mm	x	508mm		20" x 30"	508mm	x	762mm	"	"	"
20" x 24"	508mm	x	607mm		24" x 36"	607mm	x	914mm	"	"	"