

DIGIT

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Contents:

The purpose
of Digital
Imaging?

The Use of
Collage

Nature
Photography
Issues

Scanners

Print
Resolution



The Royal Photographic Society
Digital Imaging Group

A Discussion on Digital Imaging

“Our purpose as photographers is not to keep showing what is already known and understood.”

“We need to explore our art, to make connections with the other arts and with our own imaginations.”

It seems to me that we should put aside the doubts and arguments surrounding Digital Imaging and whether it be right or wrong, good or bad, however those criteria may be considered. After all, every photographer has the absolute option to employ the most appropriate techniques or procedures available.

The Luddite lobby frequently refer to past masters such as Ansel Adams, yet he himself ‘eagerly awaited new concepts and processes, believing - most prophetically - that the electronic image would be the next major advance.’ He stressed that such systems would have their own inherent and inescapable structural characteristics, and the artist and functional practitioner would again strive to comprehend and control them. Two years later in 1983 he conceded that he often observed that the more ‘far-out a work might appear at first viewing, the more exciting and valid it may prove to be. Steiglitz felt that the final meaning of photography lay with the intention of the photographer, who can employ any tool or method in the pursuit of his own unique goal.

The pure mechanism of photography involves many processes both mental and mechanical. The subjective choices begin in the brain and end in dozens of other considerations and selections. For some of these to be removed or modified, does not make the production of an effective photograph any easier. The essential criteria to be applied when assessing an image are related to the imagination and wit used in its conception and execution. The quest for super-real results has now been sidelined by the desire to see other qualities in our images. Qualities which demon-

strate an imperfect or even quirky approach to fire our imagination and carry our art forward. Current chemical methods for achieving this, range from deliberate reticulation, to monochrome inversion, to C41 processing of E6 materials; while ‘speed’ filters and Vaseline are mechanical manipulators. Applied photography aside, the finish and perfection of a photograph today, is secondary - in importance - to the finish and perfection of the idea.

Our purpose as photographers is not after all, to keep showing what is already known and understood. We need to explore our art, to make connections with the other arts and with our own imaginations. The twentieth-century has already produced many new techniques and materials. These have in turn led to new expressions in all the arts, leading to new insights into ourselves and our world. Photographic art should be of the moment (time) and reflect the rapidly changing world using the rapidly changing media available to express our impressions. Perhaps this indicates that photography should be more of a mirror and less of a viewfinder.

More imaginative approaches should lead to greater mystery and interest in the content of our work. Magritte wrote that “People who look for symbolic meaning fail to grasp the inherent poetry and mystery of the image” Charles Simic the poet, recognises three kinds of image. Firstly those seen with the eyes wide open, in the manner of realists in both art and literature. Then there are images with the eyes closed. Romantic poets, surrealists, expressionists and everyday dreamers know them. The third kind partake of both dream and reality, and of something else that doesn’t have a name. They tempt the viewer in two opposite directions. One is to look and admire the

elegance and other visual properties of the composition, and the other is to make up stories about what one sees.

It is this area of photographic art which has kindled a new and exciting type of cross-fusion in my own work. My hours in a darkroom labouring over the elusive ‘fine print’ in a fume laden atmosphere are probably the equal of many. For years I have attempted to emulate the work of Ansel Adams, Fred Picker et al in small, medium and large



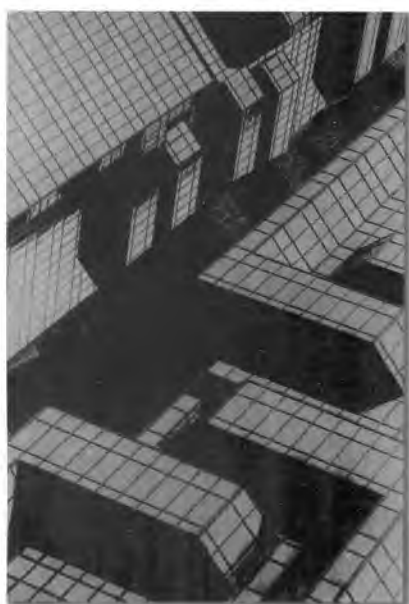
format. Like any art, there is usually no substitute for the long period of familiarisation with procedures and the development of the ‘seeing-eye’. In 1988 I gained two Associateships, categories Applied and Pictorial.

My introduction to Digital Imaging came while studying for a BA in Art and Design. Self-taught again, the learning curve was long and hard! The ability to cross-pollinate ideas and media was a valuable discovery. Now the darkroom is largely unused and the fume hazard has been replaced with Repetitive Strain Injury and back-ache!

My own work has usually been centred on architecture and its inter-

action with people.. Manipulation with lens, filters and medium has enabled me to produce prints which convey what I feel about a particular building and its relationship to the world around it. I find this a particularly interesting subject matter. Art in general can be turned away from if desired, but buildings are there, up front. Their effect on surroundings and people is enormous and extremely powerful.

The advent of Digital Imagery has meant that these effects can be put in today's context - the photograph is of the moment. DI offers the individual the opportunity to invent his or her own world from the parts of the existing one. Responding to what is around and putting our reaction down in our own 'hand-writing'. Making visible and tangible our own inner realities and imagination. A word of caution here though, for I am not convinced that an electronic collage of disparate elements is a forward move. My favoured approach is to use an existing image which has compositional integrity for subsequent DI exploration, which will not significantly alter the composition. Better still is to build the prospect of DI manipulation into the taking stage as part of the visualisation. For special purposes, layering of two or more images - rather like slide sand-



wiches - can yield really beautiful results.

I always photograph initially onto film stock - Tri-X, XP2, Agfa Scala or Colour neg. These images can then be scanned in film format, or from the print. Zone system corrections are easily carried out to ensure good Dmax values! Printers are now more affordable and will produce higher definition prints, if that is what you want.

DI does not offer an easy route to an effective image. An image that is compromised in the first instance will probably be so in the last. An effective image, that is one which grabs your attention and makes you think or admire or just wonder, needs to be conceived and visualised as an expression, however it is processed.

When Daguerre's invention was first marketed, a far sighted director of the Paris Observatory impressed the French parliament with the following observation:

"When inventors of a new instrument apply it to the observation of nature, the hopes that they place upon it are always insignificant when compared with the number of subsequent discoveries of which the instrument was the origin". I cannot help but wonder what further innovations may lie ahead for us in our field!

In the meantime I am enjoying an exciting journey of discovery through a very complex and rapidly changing media opportunity. It is refreshing, generally healthier, and definitely more in



touch with our time. We have a wealth of artistic precedents to draw upon in the search for new images. Fusion will become prevalent.

1998 is the year of Photography and the Electronic Image. The RPS Journal may shortly reflect DI in its title and more so in its content. Beautiful and expressive photographs will continue to be produced without any DI intervention of course, but by sharing the stage with Electronic Images, the RPS will be well placed for the millennium and beyond. This is our time and we are all part of it!

Tony Carter ARPS

My Digital Imaging commenced in the Summer of 1995, after reading an article in the "The Photographic Journal" and following a very stimulating day with Barrie Thomas.

DI opens up a vast scope to photographers, and although the computer is a tool that enables you to convert ideas into reality, it is the imagination and ability of the worker that produces the final result, be it good or bad or indifferent.

I have to own up to being an equipment addict at heart and have spent as much time and frustration getting the computer and its peripherals to work correctly as I have mastering the intricacies of the Photoshop programme.

When I last wrote to DIGIT Magazine it was explaining the difficulties encountered when first upgrading to "Windows 95", only to find later that I had an equipment fault all the time and none of my problems were related to the software.

I should explain that I have a computer with a system, with SCSI - Hard Disk, CD ROM, Flatbed Scanner and Film Scanner and more recently a Syquest Backup device all linked with SCSI cables. The problem was an intermittent fault that arose when reading or writing to the SCSI devices. The fault was found to be related to the quality of the SCSI cable between my computer and my first external device, which was supplied by my computer supplier (long since closed down).

The cable supplied was substantial in diameter and so looked to be of good quality! However it was found not to be up to the required standard. I have now discovered that the cables should comply to a minimum standard of "26 AWG Twisted Shielded Pair", which means nothing to me but should to the suppliers. With new cables fitted my system now works normally, so if you have a problem in which your system freezes when you are reading or writing to a SCSI device, then do check your cables and make sure they are up to scratch.

Maybe, I can now spend more time getting to grips with producing images with both Photoshop and now Fractal Design Painter 5, which is just as complex to master.

My Darkroom has now been disposed of and all my work is now done digitally, originating from colour slide or negative film stock.

On a recent walk in the hills of North Wales I exposed a roll of colour negative film, only to find when the en-prints came back from the lab, that they were flat due to overcast day of shooting. I then scanned them into my computer using my Nikon Coolscan and converted them into greyscale. Photoshop enabled me to adjust the contrast and burn in the sky to produce black & white prints better than any I had previously printed in my darkroom. The print quality produced with my Epson Stylus Pro XL printer proved very acceptable. Most of my digital imaging to date, has been in colour, but this ability to convert slides or negatives into black and white images opens up another dimension without having to work in the dark or with smelly and damaging chemicals.

I like to get the best of all worlds, by taking most of my images on slide film. My slides can be exhibited as straight slides or they can be used in my Audio Visual sequences as well as being available to digitally produce prints in colour or black & white, as well as the occasional digitally produced slide images.

For my Audio Visual sequences I produce the opening and closing title slides using Photoshop. Having recently purchased a good quality sound card (Turtle Beach - Fiji), this enables me to produce my sound tracks for the AVs by mixing and editing music tracks from CDs or Tape onto the computer and then re-recording them back to my tape recorder. The sound produced is of good quality, with the computer editing programme allowing me to mix tracks, crossfade between tracks as well as permitting you to overlay a

taped commentary onto a music track, all in stereo.

I enjoy all aspects of Digital Imaging and all I need is time, ideas and of course the inspiration. The inspiration comes from seeing and discussing other peoples work at the Digital Group Meeting that take place each month, as well as the receipt every six to seven weeks of the images that are received on disk from the RPS Digital Group Portfolio

Graham Blackwell ARPS

My pictures:

Portmerion

This photograph is a reflection in the pool at Portmerion (reconstructed Italian village), showing the buildings reflected in the water. To add to the water effect a Photoshop ripple has been added.

Cathedral

Is of Chichester Cathedral converted to black and white from a colour slide. The lamp was then coloured to enhance the effect and a new sky was added.

Aquiliglia

The flower was originally photographed against a black background. The flower was selected and an alternative background used. It was then given a textured finish in Painter before printing onto Art Paper.

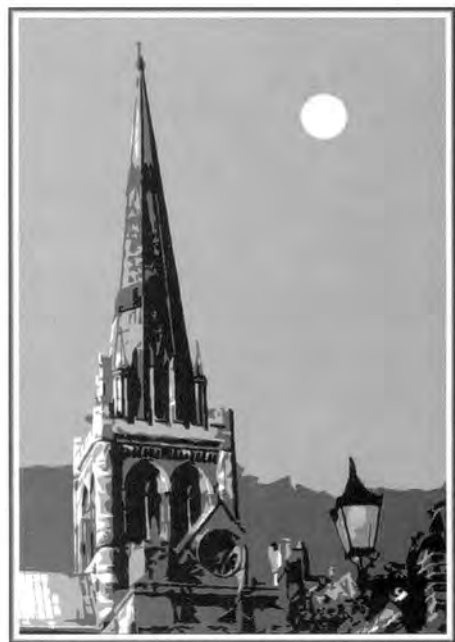
Molwynn

The image was on colour negative, taken on a walk in Snowdonia National Park and shows some of the derelict slate mining equipment and buildings. The image was changed to greyscale mode in Photoshop and then the sky was burnt in and the contrast adjusted.

Nepal Boy & Mountain.

The boy with the ball was taken from a family group photograph whilst trekking in Nepal. The background is of the sacred mountain named "Muchhapuchhre" being over 20,000 feet high.

**“..all I need
is time,
ideas and of
course the
inspiration”**





The Use of Collage

From the earliest days of photography, artists have wanted to do more than record an analogue of what the camera looked at. Since the time of Oscar G. Rejlander's collage, "The Two ways of Life" of 1857, a moral tale with somewhat ambiguous undertones, collage has played an important

meaning pasting or sticking, in slang it means an illicit love affair.

Photo montage is derived from the German word 'montieren' - assembling of photographs by pasting or other means refers in particular to the use of photographs in collage originally by the surrealists. The

role in photographic practice and used by such artists as El Lissitzky, Rodchenko, Max Ernst, Jerry Uelsmann and David Hockney. I would like to introduce the term electronic collage in which the same principles of collage are applied, but in this case through the use of the computer and the layering techniques of programmes such as Photoshop, X Res and Live Picture.

The word collage is derived from the French collar

term montage is also used in relationship to film particularly as envisaged by Sergei Eisenstein. Walter Benjamin, in his essay, "A Short History of Photography", wrote that "Collage strategy was itself an image of the "break-up", the "disintegration" of civilisation in the modern world, relevant to one of Benjamin's most famous formulas:

"Allegories are, in the realm of thoughts, what ruins are in the realm of things, the premise being that something becomes an object of knowledge only as it "decays" or is made to disintegrate".

Ulmer defines collage as ;

"to lift a certain number of elements from works, objects, pre existing messages , and to integrate them in a new creation in order to produce an original totality - a signifier remotivated within the system of the new frame"

Derrida writes that the heterogeneity of collage, even if it is constructed using all the conventions of composition it produces a signification which is neither univocal or stable. Each cited element in the collage breaks up the continuity or the linearity of the discourse and therefore leads to a double reading:



Rosalind Krauss in her essay "The Originality of the Avant-Gard and Other Modern Myths" writes in her discussion of Picasso's synthetic cubism that :

'The collage element performs the occultation of one field in order to interject the figure of a new field, but to interject it as figure - a surface that is the image of the eradicated surface, It is this eradication of the original surface and the reconstitution of it through the figure of its own absence that is the master term of the entire condition of collage as a system of signifiers'.

The Image and Language

The era of post Romantic aesthetics evolved through ideas concerned with concepts which hold that visual art (including photography) does not function independently to other symbolic systems, most notably language. It also maintains that the meanings of any text cannot be the sole property of the author as we cannot be certain what those meanings might be. Unlike the spoken word which may be amended by the author in discourse, we cannot be certain of the specific meaning of any written text and once into the public domain such text may have a multitude of meanings and indeed Derrida holds that there is no meaning outside of the text and such texts can only be studied in relation to each other. Text is seen as a space between the object and reader/viewer. This space is made up of endlessly proliferating meanings which have no stable point of origin or closure. i.e. the boundaries which enclose the work are dissolved. The text opens continuously into other texts - the space of intertextuality.

Meaning is, Derrida claims, always out of reach, for ever deferred. We should therefore abandon the search for a certainty in texts and just enjoy the play of the textual

elements themselves within the collage.

Post Modern theory contradicts the idea of the artist as the unique author of meaning in a work.

Roland Barthes in his essay "The photographic Message" maintains that there is no perception without immediate categorisation and that the photograph is perceived verbalised. He also maintains that to be outside of language in real terms means infancy; to be outside of all meaning means death. It is also claimed,² that we become what we are through our encounter, while growing up, with the multitude of representations of what we may become - the various positions that society allocates to us. In other words, there is no essential self which precedes the social construction of the self through the agency of representations. The post modernist subject must live with the fact that not only are its languages arbitrary but that we ourselves are the product of language, a precipitate of the very symbolic order of which the humanist subject is supposed to be the master.

Do we believe that the camera always accurately reproduces the object? I think that it does not and that the image lacks certain important elements of the object which could only be accurately reproduced as we might see it only through the process of human image making., for example, the texture and weight of the object its relationships in real space its true form its true colour and tonality and my presence in the spatial continuum in relation to the object when looking at it. Of course all this may be amended by the artist.

The image of the object is certainly a trace a fingerprint, but in the process of transformation into photography some of its essential nature may be lost.

Photography and the Collage
Victor Burgin compares the photographic still with Freud's

concept of the dream. The collage is a rebus which must be examined element by element - from each element will unfold associating chains leading to a coherent network of unconscious thoughts, thoughts which are extensive in comparison to the dream itself which, Freud maintained, is laconic.

The individual photograph therefore becomes the point of origin of a series of psychic pans and dissolves a succession of metonymies and metaphors which transpose the scene of the photograph to the spaces of other scene of the unconscious and also to the scene of the preconscious -the scene of discourse and of language.

The sign in collage is a function of absence The collage element and therefore the last work I made called 'Past Tense' consists of a doubling of the condition of absence through the making of collage because collage re - assembles signs and in the process disrupts their original intention and meaning in order to create new meaning(s) . The referent of the sign is lost as the collaged signifier is coupled with an immaterial concept in relation to which there is no referent. In collage the sign therefore negates its material referent.

In writing this short essay I have tried to review some of the theoretical issues which may be involved in the artistic use of those many powerful tools that are now made available to us through modern computer technology.

1. Burgin.V. "Re reading Camera Lucida " P77.
2. Burgin.V. " The Absence of Presence.P41.

Edward Bowman MA



What comes over strongly is the fascinating variety of ways in which people are using digital imaging. It releases so many forms of creativity.

This monochrome picture is

called "**Beneath La Grande Arche, Paris**" In the original colour image only the colours have been manipulated, and are intended to mirror the excitement of the architecture. I tried to retain the sharpness of the

original image rather than surrender detail in a way characteristic of the nineteenth century Impressionists. The colours were changed in Photoshop using mainly "curves" and "variations" on areas selected in turn. The original is a 11in. by 7.5 in. image with 300 dpi resolution, and was produced from a 35 mm slide loaded into Photoshop via a Kodak PhotoCD.

Mike Brown ARPS

Gallery

Please make DIGIT your journal !

Contribute your best images and/or short articles.



River Falls is a composite image. The waterfall was shot in Ingleton Falls and the lower section of the River Esk in Cumbria. A portion of the rock on the right hand side of the falls was copied, flipped horizontally and moved to the left hand side to hold that side in. The two sections were scaled to give the proportions I wanted. Layers were used in Photoshop to position and combine both sections. Original shots were on 35mm colour transparencies, scanned onto Photo CD.

Roy Rainford ARPS



Time and Tide



A Stitch in Time

John Colmer ARPS, AFIAP



Please submit images in JPEG format at 200dpi in colour or monochrome. ASCII text files are preferred.

A Simple Retouch

The two prints shown demonstrate some of the objections that can be modified with basic digital manipulation. The first print is "straight" from a photograph of an ancient aqueduct which was, and still may be, used to transport water to a sugar beet plantation just outside the village of Nerja on the Costa del Sol. Because a developer proposes to buy up land in the vicinity to build more holiday homes, the locals have strung a banner across the middle of the aqueduct voicing their objections. Photoshop has been used to remove the banner and implant a few clouds to replace the very bright blue sky. Minor cropping has been used to eliminate the black border at the top of the original print. The result is shown in the second print.

The printing was made on an Epson Stylus Pro. The original negative was planted onto a Kodak CD and Photoshop used for manipulation. The manipulation was completed at a resolution of 1024 x 1536 dpi but the printer is, of course, 720 x 720 dpi using Epson coated matt paper.

The basic process was: magnify the banner, and using the "rubber stamp" tool use some of the adjacent brickwork to eliminate the banner; as the sky was so bright and uninteresting, isolate that part of the image using the "magic wand", bring up another image of clouds and adjust the lightness to suit, then copy into the isolated area of the sky. Again isolating the sky with the "magic wand" tool and then applying the inverse move to isolate the mountains, aqueduct and foreground, they have been brightened and sharpened. The resulting print is more acceptable as an archival record of the scene.

Cliff Davies LRPS

Nature Photography and Digital Imaging

As Treasurer of the Nature Group I am aware that like myself, there are some members common to both groups. However, I am sure that there will be members of the Digital Imaging Group who are interested in nature photography but who are not members of the Nature Group. I hope that this article will be of interest to them. While a strong supporter of digital imaging I do feel that its tremendous potential could pose a danger to factual photography if guidelines are not offered in the appropriate areas.

In issue No. 3 of Digit (Summer '97) both Sir George Pollock Hon FRPS and John Riley LRPS wrote articles concerning how digital imaging could be regarded. Both looked at the mechanics of picture production in relation to what could be considered acceptable and how such pictures might be classified for exhibitions.

Reading their articles I thought members of this group may be interested to know that the committee of the RPS Nature Group has also been considering the impact of digital imaging, and how it should be treated purely in relation to nature photography. The committee's view is that it is perfectly acceptable to use digital equipment for the production of nature photographs subject to specific criteria.

The understandable concern of some Nature Group members is that the excellent range of creative facilities offered by such equipment (whilst being so desirable for many aspects of photography) may tempt some to, shall we say 'create' a nature picture which is in fact untruthful.

Unfortunately there have been occasions when such manipulation has been deceitfully used to deliberately mislead the viewer. Whilst this has always been possible with traditional darkroom techniques it is so much easier with digital equipment, hence some members concern. When manipu-

lation takes place it is all too easy for the final picture, however unintentionally, to contain misinformation which would mislead the uninformed. The essence of nature photography is that it should faithfully record what was actually seen.

Hence "The Truth of the Final Image". After many attempts it was decided that to provide a form of words which attempted to cover every eventuality would require a publication equivalent to a volume of The Encyclopaedia Britannica. It was therefore decided provide as short a form of words as possible which would be easily understood and convey to the reader the essence of the matter. Thereafter, as always, it would be left to the integrity of the individual nature photographer. As you will see the code applies to traditional as well as digital techniques.

"The Truth of the Final Image"

A nature photograph should convey the essential truth of what the photographer saw at the time it was taken.

No radical changes should be made to the original photograph, nor additions from any source, whether during processing in the darkroom, or through digital / electronic

manipulation. The removal of minor blemishes or distractions is permissible."

The above will be used by the Nature Group as the basis for its future criteria. It has been inserted in "The Nature Photographers' Code of Practice" which has just been revised by the Nature Group committee and endorsed by the RSPB and the Statutory Nature Conservation Councils for England, Scotland and Wales.

I hope the above will be useful to any Digital Group Member who enjoys nature photography.

Copies of "The Nature Photographers' Code" (A5, four pages printed on glossy card) can be obtained from John Myring ARPS 39, Barnetts Close, Kidderminster, Worcs. DY10 3DG. Cost:- 50p (chq payable to RPS Nature Group or P/O) includes postage.

John Myring ARPS

Hon. Treasurer of the Nature Group & editor of The Iris



Edward Bowman MA



Diary of a beginner:

I think I was born green. Here I am in a Digital imaging Group and I still haven't had time to learn all about Adobe or wash behind my ears photographically speaking (and hoping no one points a lens there to check.). Well it's all a bit different from my old BBC computer. I thought I was up to date with sideways ROM and a concept keyboard, still they all look impressed when I mention 6 point 4 gigs and 128 ram at the Camera Club. Now if only I could find that on switch. Still beginners always look impressive with all the gear hanging round their neck.

Well here goes, its on! This is a photo of me, now if I remove all the double chins and a few lines with this cloning tool I'll have lost weight in no time and look like Kate Moss. Oops think that's more like Stirling Moss. I'll try something else, now I know how to clone. I'll take the telephone lines out of that sunset slide.

Wonder if I could change the boring white tent background on that Dr Who monster I photographed last year. Well he still looks a little dull so I think I'll follow the steps on that tutorial CD ROM and put a light in his eye. There, he's definitely spotted Beauty and the Walt Disney casting couch now We had a spectacular guy at the Camera Club last night, Simon Ward showing lots of shots of parachuting and absolutely amazing death defying~slides. Wonder if I could jazz up my old parachuting photos. I've got a good one of landing on my bottom. Now if I used the layers palette, I could sit on one of those clouds I shot out of the plane window last year! Think I will add the one of me holding the rigging lines and then I'll put it on a layer of Stonehenge. Gosh Barrie Thomas can watch out, I can add three of me to one picture!



Swindon Imaging Group

This DI Group of Swindon Camera Club started in October 1996 with nine members at my home in Aldbourne. Each meeting is very informal and we are all happy to try out something new or experiment with effects on our photography. There is usually a core of about six RPS members at meetings each month and newcomers are welcome to come along, but please check first as sometimes the venues are changed from Aldbourne, and let us know if you like playing sardines!

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**Contributions for DIGIT
are much preferred on
disk or by email,
but hard copy
will be accepted when
necessary.**

The scanners scanned

I have been comparing some film scanners with a wide range of resolutions, and some other DIG members may be interested in the results. For a local DIG meeting, Epson lent me FilmScan 200, and we compared it with an Olympus ES 10. Clare Scriven at

eye can resolve about 5 cycles per mm at 250mm viewing distance, which is equivalent to 250 pixels per inch on a print. This is a fairly conservative criterion: indeed at our meeting the dye sublimation prints made from Epson scans looked acceptable at 10x7, and

but it isn't enough to change the ranking.

The distance between the two 'I's of the 'XII' on the transparency is about 0.02 mm. This only equates to 50 cycles/mm, and is clearly resolved on the slide, but

Scanner	Resolution pixels per inch	price, in £ inc VAT	Format	File Mb	print size
EpsonFilmScan/200	1200	386	35mmorAPS	6.5	6x5
OlympusES10	1770	410	35mmorAPS	11.5	9x7
KodakPhotoCD	2048	70pperscan	35mm	18.8	10x8
NikonCoolscan	2600	586	35mm	28	12.5x10
Topazat4000dpi	4000	£30perscan	Flatbed	59	20x16
Topazat8000dpi	8150	£30perscan	Flatbed	273	40x32

Kodak Research and Development Division kindly provided scans of the same slide on several more scanners. The original slide (figure 1) is on Kodachrome 200, which is said to resolve 200 line pairs per mm, suggesting that a scanner with 200x2x24 9600 pixels per inch is needed.

The table shows the characteristics of some of the scanners I looked at. The scanning resolution is the quoted optical dpi.

The prices are lowest retail prices I have seen, and include VAT. I assume most of us would go to a bureau for PhotoCD or Topaz scans - a Topaz scanner would cost about £30,000.

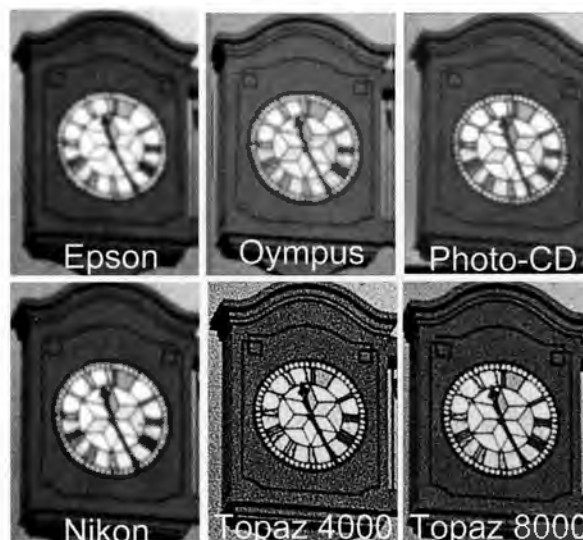
The file size is for an uncompressed TIF file in all cases, lossless (LZW) compression reduced the files to 55% of the uncompressed size, and a cautious JPEG compression (q=5) reduced them to between 12% and 20%. The print size is calculated as the maximum size that each scan could theoretically be enlarged to, using the usual criteria for print definition requirements. I have assumed that the

the Olympus print at this size was indistinguishable from a photofinishers commercial photographic print. To test the systems more thoroughly, figure 2 shows a very small area, 2mm high, of the clock face, taken from a scan by each system. It is quite clear in my scans that only the Topaz can do justice to the resolution of the Kodachrome transparency, and that the

would require a print at least 12x10 for the two digits to be resolved by the naked eye.

The Epson will scan a set of six negatives in its holder automatically. It motors the film holder past a stationary light and CCD array. I found it difficult to set the required resolution, since it asked me questions about print size and method, and then calculated the required resolution itself. It is said to scan at 10 bit colour depth, though the file is output at the usual 8 bit per colour. The Olympus moves the sensor and light source past the stationary film, which seems a less rugged approach than the Epson, besides not permitting multiple slide scanning. It does have a focus adjustment. It was the only scanner that did not require a scsi interface (it used a parallel port), though a scsi

version was available. The photoCD uses a special compressed format for storage - the file size quoted was for the 2048x3072 image, unpacked and then stored as a uncompressed TIF file, for comparison with the rest. The Nikon has automatic focus, but in this scan



performance of the other scanners is at least in the same ranking order as their resolutions. I need to make this point, since it is often suggested that some scanners may have more cunning interpolation software to compensate for limited optical resolution. Maybe so,

manual focus on the clock was used. The apparent graininess of the Topaz scans is an artefact of the scanning, and can, the makers tell me, be avoided by oil immersion of the transparency. The Topaz, being a flatbed scanner will of course scan much larger film formats than the rest.

This was not a rigorous study, simply making use of some equipment that happened to be available, and I did not

have access to a Minolta Quicksan 35, which, with a resolution of 2820 dpi and a street price of £821, might have been interesting. I have not covered the very important question of colour depth: my files are all 24 bit colour, i.e. 8 bits per colour per pixel, which is all I need for output to an Epson printer, but does not allow the degree of colour and tone adjustment possible with a 30 bit colour depth. (Some professional scans go up to 48 bit depth.)



Patrick Forsyth

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Conclusions:

- You get what you pay for: each scanner is, in its own way, good value.
- At the moment, if you really need to retain all the detail in the film in order to allow subsequent manipulation or very large print sizes, you have to go to a bureau service.
- To store the full information content of a Kodachrome slide would require about one quarter of a CD Rom disc.
- At present, the '75% digital' approach of making original exposures on film, then scanning them before manipulating, printing or publishing them electronically, seems for most uses to be a much more cost effective approach than using a digital camera. For the same resolution, a scanner is much cheaper than a digital camera.

A letter to the editor:

For about 40 years I've been happily going mad trying to make audio/visual shows of one kind and another and whilst that lot in RPS A/V Grp think its rubbish I got to the stage where lots of normal folk like it, and I slumbered happily along until Frank arrived. Frank is very much like you people in Digital, he's a b..... genius. Not only that the son of a friend lectures about computers, this is John, and he dragged me to his Sixth Form College for courses appropriate, the others there kindly said they didn't have many 80 year old students but tolerated me with a sort of pity.

I was gently snoozing along, more or less content with my somnolent World, not bothering many people much, and I read an article in the AV Gnus written by one Glenys Taylor and, daft like, I wrote to her. 'er in't kitchin said "You've done it again, why don't you keep your big mouth shut.?" but I was caught.

At this stage, due to the machinations of the above mentioned gurus and the avid activities of Millenium computer folk, I find myself lumbered with things I am

scared of including Pentium 133, 3.2 megabytes, 64mb RAM, 1 5"VDU, a 690C colour printer, a 520 black and white printer, an HP Photosmart scanner, a 24 speed CD (plays my 1930's swing stuff beautifully), W95, MSWks4, Pegasus, a Modem, a zip drive, stacks of floppies, Photoshop 3, Locoscript Professional, about 15,000 transparencies and a dozen prints, subscription to Onyx, a geetar (but arthritis has stopped that) a Bank Manager who is hopping mad and 'er in't kitchin who seldom speaks to me nowadays (because I'm anchored up here in my studio with a wall behind the VDU splattered red with swear words).

Everything is different from what I had become used. I bought "Inside Photoshop 3," (cost a lot to get a truck in which to bring it home) and it goes on like it was written by a woman (well you know how they do go on at things and as a fully paid up MCP I oughter known better) At least that book has dispensed with a need of sleeping tablets - two pages and I'm fast asleep. The trouble is that I am dim. As my Uncle Matty (a farmer) used to say "Young Raymond, thar't thick as bulls lugs" and he was right. Also I ought to tell you that I am a

retired Chief Officer in Local Government, and, as most of you know, that breed is inherently thick as well. So for me everything has to be explained simply and know what? When I read DIGITAL it very nearly gets there.

If Digital Imaging is to succeed in the lesser areas of intelligence, assuming at that level there's enough in the Bank, the need is for guides for idiots like me. I found weekly PC Knowhow which is taking me along one or two unknown routes when I find time to read them (after reading DIGITAL.) I have joined a local Digital Im Group and that lot scare me as well. In this Technological World the mind boggles at how much there is to learn. All I can say is that like Wallace (and Grommit) a slice of Wenslydale (or Swaledale which is better) and a drop of malt eases the pain.

In two or three years time, if I'm not committed then I might show you the odd picture.

Ray Wallace Thompson

DipArch,FRIBA,ARPS,FPSA,AIIPC.

Scanning and Print Resolutions

First to make sure we agree on the definition of ppi and dpi I'll give my understanding of them.

Ppi (pixels per inch) refers to the number of elements in a digital picture per linear inch. Each element requires a number of bytes to store the image and for a B&W image there is one byte per pixel and for a colour image three bytes per pixel.

Dpi (dots per inch) is generally exchangeable with ppi but for printers refers to the number of dots (of ink) per linear inch that a printer can deliver.

Most Epson printers are claimed to deliver 720dpi but the RESOLUTION of these printers is really only 180dpi, this is because the printer can deliver 180 dots of EACH of the four colours (CMYK) within one inch and so the manufacturers multiply 180 by 4 and call the printer a 720dpi machine but the dot size is 1/180" (approx).

Given this fact then the resolution to aim for for a final print is 180dpi or perhaps a little higher.

The scanning resolution depends on the degree of enlargement needed to produce the final print - eg if the final print is to be the same size as the original then scanning at 180 (or 200 if the scanner can't be set to 180) should give good results. If enlargement is anticipated then, if say a 6"x4" original is to be enlarged to 10"x8" (two times linear enlargement) it will be necessary to scan at 360 (400) so that after re-sizing in Photoshop (without re-sampling) the resolution halves to 180. And so on. This is why scanners for 35mm

negs or slides have to achieve very high resolutions, if the one inch side of a 35mm neg is to have the potential to be enlarged to say 16" then a resolution in the order of 16 x 180 is needed or 2880dpi. Most flatbed scanners are capable of scanning at very high resolutions by using interpolation (ie. intelligently guessing the information that lies between pixels) but this is not generally recommended as quality is likely to suffer.

Another factor is the amount of detailed editing you may wish to do on an image. If, for example, you want to work accurately on the detail of an eye in a portrait then you will need to "zoom" in on screen until the eye is very large. If you have scanned at a low resolution then the image will soon become "pixellated" and you will have difficulty seeing the detail let alone editing it. So in these circumstances it might be necessary to scan at a higher resolution than printing dictates, perhaps as high a resolution as your system allows. The controlling factor will be the file size your system can handle without coming to a standstill!

That's the theory as I understand it. In practice I tend to err on the side of higher scanning resolution than is

necessary for the job in hand so that if in future I buy a wide carriage printer my existing files will stand further enlargement without doing the whole job again!

For the record I am using a Pentium 133Mhz PC with 80Mb RAM, an Epson GT-9500 flatbed scanner and an Epson Stylus Photo printer and I work from either CD ROM or by scanning 6"x4" prints, sometimes larger, using Photoshop 4.0 for editing and Illustrator 7.0 for presentation.

John Ainsworth ARPS



Tony Carter ARPS

Picture Publisher comes to the rescue of Photoshop!

For a long time, I've heard that PhotoShop is the market leader in imaging software and is preferred and used by many (most?) persons seriously manipulating images. Recently I have had the opportunity to try out PhotoShop v4.0 and I have been greatly disappointed with its masking methods as compared with Picture Publisher v5 (henceforth referred to as "PP5"). In particular PP5 has the ability to "fill holes" in masks (CTRL + D) ... very useful if used with the "smart mask" tool in PP5 (PhotoShop equivalent is "Magic Wand" Tool).

Also with PP5, there is a "Paint-on" mask tool (pixel width can be set from 1 pixel upwards). I use this tool to draw around the outside of areas to be masked (magnified for detailed and accurate masking down to individual pixels). CTRL + D now fills the holes in the mask i.e. fills the centre of the mask. Save the mask with a suitable name e.g. "Shopmask" if it is to be transferred to PhotoShop.

I have found it easier to create a mask in PP5 and then to transfer this mask to PhotoShop for use with the same image. PP5 saves the mask in its own sub-directory "clipbits" as a black and white (2-tone) .tif image. This tif image can now be loaded into PhotoShop as follows

(a). Using PP5, save the original image in a suitable directory as "onhold.tif". Save the mask for this image using PP5 as "shopmask" or other unique name. (I've written a macro to do this!).

(b). Go into PhotoShop and create the following macro

(action) which can later be used every time a PP5 mask needs to be transferred over: -

1. Open "Onhold.tif".
2. Select all. Copy to clipboard. Close.
3. Open "Shopmask.tif" in PP5's "clipbits" sub-directory.
4. Select, colour range and click onto a white area of the b/w PP5 mask.
5. Selection, save "Shopmask" as a new channel. Do not close the image.
6. Select none.
7. Image, mode, RGB (converts to).
8. Paste. Merge down layers.
9. Selection, load, (channel #4 or whatever!).

STOP recording your "action" now!

The mask is now superimposed into the original image, and the "action" as recorded, can be replayed for other PP5 masks. Note ... the PP5 "Shopmask" must be removed in PP5 before saving a new "shopmask" in PP5. Do NOT overwrite it, there are problems with the "action transfer" if you overwrite! Delete the PP5 previous "Shopmask" then save the new "Shopmask". Having developed this technique of mask transfer to PhotoShop, I

still prefer to do all my image manipulating in PP5. I find that PP5 is so much more user friendly than PhotoShop, you can create your own customised tool bars and you can have all your macros in one or more tool bars which can be "parked" out of the way of the main image until needed. Apart from the "effect filters" in PhotoShop, I find that PP5 (there is now a PP7 version) can do most that PhotoShop and it's about a quarter of the price!

**John Wigmore. FRPS,
AFIAP, DPAGB, APAGB.**



Tony Carter ARPS



Digital Imaging Group

The new Digital Imaging Group LOGO. Congratulations to Tony Carter who submitted the successful design which is shown above.

The Annual General Meeting of the Digital Imaging Group

The Annual General Meeting will be held at the Brunswick Room at the Guildhall in Bath on **Saturday 28th March 1998 at 4.30pm**. The Photo Forum will be taking place on the Saturday and the Sunday of the same weekend. Please come to the forum and the meeting!

A hands on session at Wycliffe College, Stonehouse, Gloucestershire, GL10 2JQ

Just off junction 13 on the M5 Saturday 28th March 1998 10.00am to 12.30pm

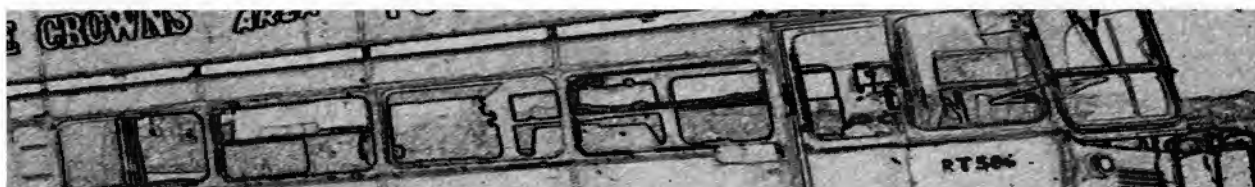
A network of Apple Macintosh Power Computers running Adobe Photoshop etc. etc.. Access to a Scanner, Colour LaserWriter and the Internet. A hands on session to input, manipulate and publish a colour graphic both on paper and via the World Wide Web. Coffee/tea and biscuits provided and the session will finish in time to enable members to travel to Bath for both the Photo Forum and the Annual General Meeting. Please send £5 to cover costs together with your name and address to Bill Henley at Wycliffe College. Confirmation and a map will be posted to you.

The Digital Imaging Group's Members Exhibition at the Royal Photographic Society in Bath

24th June to 7th July 1998 Entries must be the original work of the entrant. The prints should be mounted on 2mm white card with a mount size of 40cm x 50cm or 50cm x 60cm, and accompanied by the original image saved as a JPEG file on a 3.5 in floppy disk. They are to be received by **31st March** and should be delivered or sent to:

**Margaret Collis ARPS,
The Pleck, Bristol Road, Wraxhall, Bristol, BS19 1LE**

All members are encouraged to enter. Please mark the envelope "Digital Imaging Group Members Exhibition Entry" and pack securely.



The Digital Imaging Group consists of members of the Royal Photographic Society who have elected to pay an extra subscription to receive the group's journal DIGIT and to work together via meetings and a circulated portfolio to promote digital imaging.

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Vice Chairman: Geoffrey Carver

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