DIGIT

Contents:

The New DIGIT Web Site

The original site at www.digit.org.uk was set up as a temporary solution some years back but as so often happens it continued for far longer than was intended. For some time the committee had wished to have an upgrade and eventually an opportunity arose to do this at a price realistic to the group. In this article I hope to explain the development and rationale behind the design and implementation. Also, to give instructions on how to use the site and indicate how the group may best benefit from this exceptional resource. I would hope that I might also stimulate ideas for further exciting developments.

In conclusion there will be some technical and financial details which may be regarded either as constraints or creative challenges.

Requirements:

All pages to download in a reasonably fast time using a standard 56K modem

The home page to display from a database the current calendar event or news item. This database to be updateable via a web browser (password protected).

The home page to display from a database an image randomly chosen from a library of images. This image database to be updateable via a web browser (password protected).

The home page to be attractive, distinctive and clear with intuitive navigation to other parts of the site. All other pages to have a link to the home page.

huge hidden costs. Involved at least four times as much programming time as originally anticipated.)

Login:

Use RPS number as ID

Allow change of password

Allow addition of extra information by the user

Image functions:

Three separate databases of images instead of one; members, exhibitions, illustrations for the information tab

Hyperlinks between images, members details, exhibitions etc.

Flag up new items (up to 10 days old)

A search function for exhibitions, images, members etc.

Function to sort data table by members name, exhibition images, number of personal uploads

Find members by name or RPS number

Edit exhibition information

Front page:

Randomly select the image from one of the exhibitions

Include hyperlinked information about the member and the image

Digit page:

Select the committee names from the database and hyperlink to their details

Have the enquiry page automatically select the secretary's email address from the members database and email the enquiry

Events tab:

Divide events into different categories

List events in date order within categories

Present events in date order

Information tab:

Divide information into different categories

A dynamic creative tool for all members
(website programmed and implemented by Iain Henley MPhys)

The original specification was later expanded but is included for information.

To provide members with:

Contact details for the group committee, regional organisers, RPS and other relevant organisations (including URLs and email addresses)

Diary and reports of events for the group, RPS and other relevant organisations (including regional groups)

Web URLs and email links for those members who wish to have their details published

Library of members' images

Library of exhibition images

Library of examples of DIGIT publications etc

Member discussion rooms with threads (password protected)

Reviews of hardware and software searchable by key words (updateable via a web browser)

An on line enquiry/registration page

As many pages as possible to be powered by dynamic databases which are updateable via a web browser (password protected).

Member Discussion Rooms:

Each item submitted to the list to contain:

Subject thread, text message, date of submission and the name & email address of the sender

Image Libraries

Each image to have key word(s), date of submission and name and email address of the "author".

The above constituted the basis for the "contract" but the site produced went far beyond this specification and involved a great deal of extra programming time.

Current extras to the original specification (not exhaustive) :

An SQL database set up on the www..digit.org.uk site and accessed via ASP pages.

(This replaces the original idea of buying in custom software which it was found did not give the promised flexibility and had

Flag up new items (up to 10 days)

Place all items in a menu

Include a search function by author, topic, etc etc.

Discussion tab:

Automatically assign administration rights when an administrator logs in

Allow administrator to edit, create and delete forum headings in addition to the members topics and items. ie.. Three levels; forums (admin), topics within forums (member), item within topic (member)

Allow members to "sign up" to receive any new items by email for chosen topics

Hyperlink the member's names to members details

Admin tab:

Make this tab automatically visible to administrators when they log in

Edit members details, allocate administration rights, indicate committee titles as appropriate

Administer exhibition images, edit descriptions

Create, edit & delete forum headings

Delete discussion items when out of date

Create, edit & delete events

Delete event items when out of date

Create, edit & delete images for illustration of information pages

Delete info items when out of date

Edit the front page new item

Record logins by user, date, number of logins

Provide for different levels of administration

Where now:

The current design of the new site is such that it is your work and your contributions that determine its character. The administration system enables a team to maintain and update the material and I would hope that some non-committee members might become involved in this. There must be much creative talent and many original ideas out there for the information pages, the discussion forum etc. etc.

On the original specification the commercial quotes obtained were from £20000 to £30000. That specification has been much expanded and I suggest that the commercial cost for the current site would be from £30 000 to £40 000 . There are still a number of extra features that we would like to include and we have the opportunity to create a site, which gives superb value and service to the members at a ridiculously low price.

The Navigation Bar

This bar is along the top of each page of the web site in order to provide a clear and consistent interface for navigation. Each section of the site has a tab and within each tab are separate menu items. The sixth tab is blank but automatically reveals an Admin label when an authorised administrator logs in.
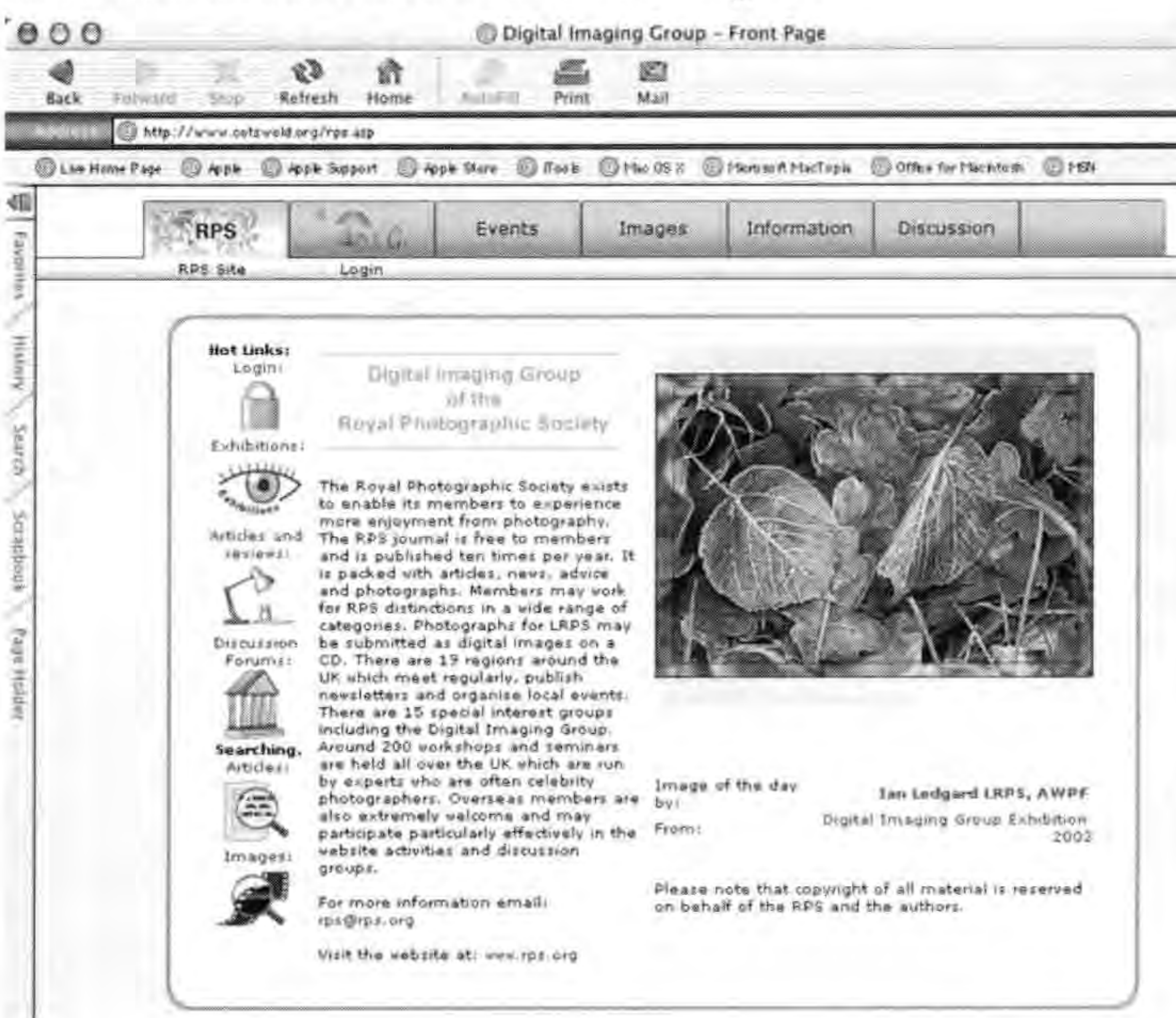
A column of icons are linked to sections of the web site. The image is selected randomly from the database of "Exhibition" images. These images are loaded by an administrator and currently include the annual DIG exhibition and successful panels submitted by members for a distinction. Clicking on the image takes you to a full size image with links to the other images in the exhibition. Clicking on the members' name takes you to their personal details or you can click to see thumbnails of all the images in the exhibition.

Most images and names are hot linked. Click on them and you will automatically be taken to the relevant page.

Digit

Please type in your user id number and on the first page the form to amend the personal details appears.

user id:	
password:	

[Login]

Update your information:

first name:	William
initials:	
website:	
email:	weh@wycliffe.co.uk
phone:	
fax:	

When you log in using the link on the first page the form to amend the personal details appears.

Once logged in a member may upload up to 10 JPEG images not larger than 100K and with a maximum side length of 500 pixels.

Under the **Images** tab it is possible to search for members and to see whether they have Exhibition or Personal images. Click on the name for more personal details or on the number of images to see the thumbnails

Use this page to search for images.

Anyone may search

Under the **Events** tab you may select the category of event and see a list of the events with dates, venues and other notes. The information is in date order and maintained by an administrator. Items may be submitted for inclusion.

Under the **Information** tab there are a number of categories. For each there is a list of contents. Clicking on the title of any item displays the data together with any associated images. Material may be submitted for publication.

Broadband

There was a deliberate decision not to incorporate Flash and other similar technologies into the basic digit website. Having to download plugins and then wait for the files to download, open and play can be a huge turn off. A jolly little animation can be quite sweet the first time but can pall if you have to wait for it to download and play every time you visit the site. It is member's images that are given the prominence and there is a trust that the members will not let us down. I personally think that side of the site has worked very well.

The web site is public with the exception of the discussion pages. Anyone can see the images and information loaded. However, members need to log in in order to upload or delete their images. It is also necessary to log in to edit the personal information or to take part in the discussions.

However, those on the new broadband services have the capacity to enjoy the new larger file, processor intensive applications. Quite quickly many of our members will be using broadband and we should build suitable resources into the site. There is a broadband menu item on the front page and this will provide the gateway to a secondary site for Flash and QuickTime etc Appropriate warnings will be given about the need for fast Internet access in order to enjoy these. **Once again there may be members out there who could contribute suitable material.**

Members Login

Members' RPS numbers are used for the ID. Initially the password is the user's last name but this may be changed by the user. The personal information only becomes public when a personal or exhibition image is uploaded. Initially only the name of the member is available. This will remain true until the member updates their personal information. It is the member's decision whether to add more detail and to decide what information is to be published.

There is an area for personal statements and this could include a full postal address if wished. It is requested that the site is not used to publish business details.

image title:	
information:	
keywords:	
image file:	[Browse...]

Examples from the web pages:

Extract from the list of members who have images, a notice of an event and an information page complete with an image.

Members Name	Exhibition Images	Personal Uploads
Mrs Maureen Albright LRPS	-2-	-10-
Mr Eric T. Bower ARPS		-10-
Mr Michael Brown ARPS		-10-
Mr Jim Buckley LRPS, BSc, ARCS		-10-
Mr Duncan Evans		-10-

You can choose how to search and sort the members who have images on the site. Clicking on the number takes you directly to that member's index page.

10 November 2002

DIGIT Spectacular

At the Benn Hall in Rugby. We are proud to present Ben Willmore, from the USA, who will be giving two different lectures, one in afternoon. We shall also have the usual trade year and advanced booking is a MUST - tickets Reddings, Kingswood, Bristol BS15 4SB Application Forms will be included in DIGIT No.

We are dependent upon members keeping John Long informed of events that would be of interest to the DIG group (and others who visit the site!).

Hardware Reviews |

Search

LEICA DIGILUX 1

Author: William Henley

date: 27/5/2002

The information Tab gives access to a range of categories including Hardware reviews. These reviews can contain text and images.

Phil Taylor ARPS has provided reviews on the Lowepro Stealth bag and the 15-30 mm Sigma lens. Please have a look and if possible think of any reviews that you could submit.

* High-speed aspherical Leica lens with optical 3x zoom

Search Criteria:

LEICA DIGILUX 1

Canon D60

FinePix S2 Pro digit ...

Minolta 7i

Peerless Removable D ...

The Discussion Forums

o— Topics —o

(2) B&W printing

(1) B&W Printing with inkjet.

(2) Wessex DI Group
September Event

New Topic

Under the Discussion tab it is possible to read and submit comments, information and any other textual material to the discussion pages. There are a number of different discussion areas or forums. Within each there are a number of topics. Members can add their own topic. Within a topic they may select the reply button and add their own contribution. If a topic is of particular interest to a member it is

Together with the ability to upload images the discussion pages ensure that DIG members can make an active contribution to the site without the need to submit their text or images to an administrator. It is possible for the committee appoint administrators with limited access to the site in order to be able to add to the Events or Information areas.

Christopher Moss   13/8/2002

Can anybody throw some light on the pros and cons of B&W printing. I would like some good (honest) practical advice.

John Long   18/8/2002

Christopher - It would appear that the best results are obtained with the special black and grey inks together with a suitable paper, but this means that you need a printer which is used soley for monochrome work. I have been successful in making some monochrome prints by using just the black cartidge, and several of these have been accepted in National Exhibitions, so they cann't be that bad!

✓ Email Me Topic   Reply

possible to select the Email Me Topic button and any submission to that topic will be automatically emailed to the address in the personal details.

> **"Email Me Topic"**
> **only appears if the member has entered an email address in their personal details.**

This feature is perhaps one of the most powerful but least used of the web site. Its value depends greatly upon the frequency of members' access and the willingness of all to share their knowledge, questions and experiences. When the current list server ceases to operate the value of the discussion forum will become more apparent.

Currently image attachments are not supported in the discussion area but there is the potential to have a Folio discussion board with the exchange of images and comments. By using the option in topics it would be possible for members to select to have contributions automatically emailed to them. It would however be necessary to login in via a web browser in order to post comments or images rather than using straight email.

Other features:

On the front page there is the current news item. This is updateable via the web by an administrator. Members should look at this frequently in order to obtain the latest news.

The DIG tab presents a page with the current DIG committee. Clicking on a member's name gives the personal details of that member. There is an online enquiry page which is automatically emailed to the member who is listed as the current secretary.

The Admin tab which is seen only by the administrators includes a log of the numbers of accesses to the pages and a record of members' log ins. The administrator is also able to upload, edit and delete images, events and information.

It is important to note that all the administration may be performed by those authorised via a web browser any where in the world. No FTP or other special software is required. Changes are instant.

Different access levels may be defined which facilitates the sharing of the load by members of the group.

Where from here?

As previously mentioned the list servers will eventually not be available to the group. The cost of hosting our own listserver could be some thousands of pounds per year. The only economic alternative may be communicating via the web site. This would involve creating some new database tables with a suitable interface. It has also been suggested that there be a chat line facility and the provision to download an application form as a PDF.

The random selection of pictures for the front page sometimes results in the same image being shown more than once in quite a short time. A another database table could be created to hold the information about which pictures had been shown recently and to prevent a second showing within some appropriate time. Also a log of uploaded of images in order to enable an administrator to monitor the images most recently loaded.

It could also be possible to have members email addresses stored in a manner that would enable an administrator to send out group news messages. How about a section for members to advertise items for sale?

Website Issues

The logs of the member logins make interesting reading. A few group members regularly log in but many have very rarely logged in and some never at all. The discussion forum is extremely rarely used. The information and events pages have huge blanks and do not have the feel of lively interchange between members.

Have we got it wrong? Is there a genuine demand for a group website? Do members require different services to those being offered and suggested?

All the clever, expensive technology in the world is of no use if it does not attract the members to use it. There are thousands of flashy web sites out there which show continually out of date information, rarely change and are of doubtful value. How do we ensure that our site does not fall into this category. It has been good to see the use made of the image libraries by a number of members but we need more lively interaction with images, news and views.

Would sharing the ownership by involving more members in the administration help? Are there people out there who could specialise in collecting relevant information and posting up to date data and reviews? Many of the more interesting postings on the list server could be transferred to the web site and shared by all. Do you have a special interest or privileged source of information that would enable you to contribute?

Something that I have noticed over the past few years is an increasing reluctance of some to share their information and skills in education. Schools have become competitors and if you have an edge or an idea you want to keep it to yourself. Is there now a similar reluctance in our world of photography?

There is a great deal of competition for good information and tutorials. In many cases there are more profitable or higher status forums than DIGIT or the web site. However, as a group we need to decide our purpose and I hope to agree to contribute to a common good. I have been very grateful to all those members who have been willing to continue to freely submit articles and advice .. thank you! Your efforts and generosity are appreciated.

An LRPS by CD ROM

The first, experimental submission of images on CD for the LRPS was held in March. Of the 14 submitted, seven were successful. These personal notes may encourage others from the Group to try this route. Good luck!

After years of prevarication, having filled in the submission forms twice but not quite having the courage to send them off, this surely had to be the opportunity I couldn't miss. Starting on the distinctions ladder with an 'L' based on a portfolio which I could submit on CD was just too good to be true. With a growing interest in digital imaging, a brand new CD writer and fired up by some excellent lectures at the Spectacular day in Rugby last year, this time I had to do it. I still had enormous trepidation, and at that stage the guidance was a little sparse. But I made a start.

I guess this is where I made exactly the same mistake that everyone does, and which the general guidance on submitting portfolios for distinctions advises strongly against. I had a slide scanner and thinking back over several decades of slides taken in many different countries, I felt sure I could assemble ten, make some minor adjustments and have the submission ready within days. Well, it took rather longer than that to begin to sort all the slides and I then realised the problem: a submission for a distinction, even at the basic level, really does need some coherence, whether it be by theme, presentation or the exploration of a particular subject. How much more demanding these will be at the next level I have not yet begun to contemplate! But it was obvious that taking a random sample of what were in themselves no doubt suitable images would not lead to success.

At the same time, I was struggling with the instructions and was pleased to see more detailed guidance published on the RPS web site. Attention should be paid to monitor calibration and various helpful links are given. I made some test scans and soon realised I hadn't quite got my mind around the required format for submission. This is specified as TIFF with pixel dimensions appropriate to a computer screen - 1024 by 768. More particularly, in order to fill the screen on which the digital images would be projected, the Society asks that the

maximum horizontal dimension of a landscape image is 1024, whilst the maximum vertical dimension of a portrait image is 768 pixels. If you think about a landscape format screen with proportions of 1024 by 768 units, you can see what is required.

But the image was to be about 2 MB maximum size. In needed some clear and rapid guidance by e-mail from the Chairman of the distinctions panel, Dr Barry Senior, before I could quite get my mind around this. The trick was to scan at the resolution which would provide an output with the maximum pixel dimension required. I found it easiest to think of this by settling on 100 dpi for the resolution. So, for example, with a 35mm slide of which the long side is 1_ inches, scan at $1024/1.5 = 683$ dpi, or at a slightly higher resolution to allow for any cropping. Some scanners will allow you to set the output resolution and dimensions in the software which in turn determines the scan resolution, but my machine doesn't have such sophistication. Alternatively, you can scan at a greater resolution and then, in your usual image editing software, such as Photoshop, resample the image to give you the pixel dimensions required, at 100 dpi. I'm not sure how any degradation from resampling really affects an image projected digitally, but perhaps someone more expert than me will explain it.

This all made more sense to me when I drew a simple diagram. (see page 11)

With apologies to those who work in cms, I drew this diagram. For a landscape image, plan to get a final horizontal dimension of 1024 exactly, and let the vertical dimension take care of itself so long as it doesn't exceed 768 pixels. Similarly, for portrait format fix the vertical dimension at 768 pixels at 100dpi.

Having surmounted that hurdle, I went back to slide sorting. My eye then caught a question on the application form: Over what period has the submission been put together? "Several decades" would not look impressive I reckoned and went back the drawing board. After a debate with my wife the conclusion was that I should find some recent shots which held together as a portfolio, using the guidance on displaying printed material submitted for the LRPS. After all, this is what the assessors would be familiar with.

Flicking through the albums I chose some shots from Venice, on negative stock.

Digit

contd. Would I now fail by choosing such an obvious location which must have been done one million times better by so many others? On the other hand, surely I couldn't fail with ten good shots of Venice, provided they were not the obvious angles. These photographs were taken on a four-day break and from the three rolls of film I used I soon had 15 and then 10 which I could arrange. Here again, advice from Dr Senior was helpful (and came whizzing back in response to a question on the RPS list server): the images would of course be viewed in the sequence in which they were presented on the CD and so they had to make sense in the order in which they were presented.

Writing to CD is easy with the commercial software which comes with the writer. In addition you need to add a couple of files on the CD giving the information required for the submission, and in particular your personal details in case the CD becomes separated from the application form – all CDs look alike! One final problem on the application form was finding a member who could vouch for the images being my own. Knowing no one who could, my wife attested to my honesty.

My first image was taken reasonably early in the morning looking across the roofs of St Mark's basilica. I had requested a Kodak CD for this film so the scan was ready made. Apart from cropping and beefing up using Levels in Photoshop Elements, the sloping roof on the right hand side gave me a lot of trouble. It was far too bright and led the eye out of the picture. By carefully selecting the area and applying the colour from the dome roofs I was able to get it back into balance.

Otherwise, the other nine images could have been printed and submitted without much digital manipulation: Levels, Crop and Contrast seemed to do it all and I was not submitting a specifically digital portfolio. However, I did find the Perspective control helpful since a couple of my images were taken from viewpoints which produced some converging and diverging verticals.

I learned a good deal in the month it took to select and arrange the sequence of my images, and write them to CD. I was thrilled to be successful and am very grateful for the advice I received on the submission. Whether you are like me and choose essentially straight shots or go for heavy manipulation, this new initiative by the Society is surely a route to the LRPS which offers great possibilities.

Jim Buckley LRPS
see colour pages

Blending Modes

Pictures of winter trees or skyscraper horizons are difficult to place a sky behind. Here's how to do it:

Put up your picture, lets call it A.
Check its size and resolution.
Find a picture of a suitable sky and change it's resolution to match; then copy it and paste it into picture A
(Alternatively, hold down Alt as you drag it across from one picture to the next with the move tool)
If the sky isn't large enough, paste it twice. Put away your sky picture without saving so that it will remain at its original resolution.
Place the sky correctly - and if you needed two copies, click on the Layer Mask icon (bottom left, looks like a square with a circle in the middle). With black as foreground colour, take a soft brush (or air brush), reduce to around 17% and gently stroke away the sharp edge on the overlap of the sky till it merges. If you make this modification following cloud lines, it can disappear completely. Switch off all eyes on the layers except alongside the two skies and click on the little arrow top right of Layer Palette to click on Merge Visible. (This will just merge your skies into one big one all on one layer but not combine it with the other layers. Open all eyes.
Go to where it says Normal at the top of the Layers Palette and click on the little arrow to pull down the Blending Modes menu . Choose Multiply Mode (to bring up all darkest pixels).

Illustration: Change to Multiply mode

Click on Layer Mask (see above) and remove any places where sky shows and shouldn't. If your hand slips, swap the foreground colour to white, and paint your cursor over the mistake, and the mask will be wiped away.
When finished, drag the thumbnail of the layer mask down to the Dustbin icon bottom right and, when the menu comes up, click Apply. Please always keep your eye on the little square icon which comes up to replace the brush in the layer when you are working on the layer mask.
It is most important to observe the change when you click on the thumbnail of your picture (or sky) instead of the mask - this icon will change back to the brush, indicating that you are now working on the layer directly and not the mask. There is no problem with this, I jump between the two continually but you must be aware of it so that you know if what you are doing will affect the mask or the layer itself. If you suddenly find a black swath appear, you are painting in black on the layer - quickly seek the help of Edit/Undo!
Suppose we want to make our own (evening) sky. Close the eye on your blue sky and open another layer (Click on New Layer icon bottom right next to the Dustbin)
Choose the colour of sky you want as foreground colour.
Go to Gradient tool. Make sure you have the straight gradient running from Foreground to Transparent.

Start at the top of your picture and swipe down to just below where you want your sky to stop. If it's not right, Edit/Undo and try again. It may take several attempts to get it just right.
Change the layer to Multiply Mode. If necessary make a layer mask to clear any unwanted sky (as above).
Perhaps you would like to have a moon in your new sky.
Fetch a picture of the moon, check resolution, hold down Alt and drag it across to your picture (A)
Change to Screen Blending Mode (which brings up the lightest pixels).

Illustration: Black disappears and moon remains over an orange sky

The dark bushes in the foreground need to be brightened up. To do this we will use a negative to positive technique. This doesn't always work but when it does it can be quite dramatic.
Click on the Background layer (original picture A), and drag it down to 'Make New Layer' icon to duplicate it. While it is highlighted click Image/Adjust/Desaturate, which turns it into a black and white image. Next click Image/Adjust/Invert, which turns it into a negative.

Illustration: Positive to negative

Betty Billingham LRPS
colour illustrations opposite
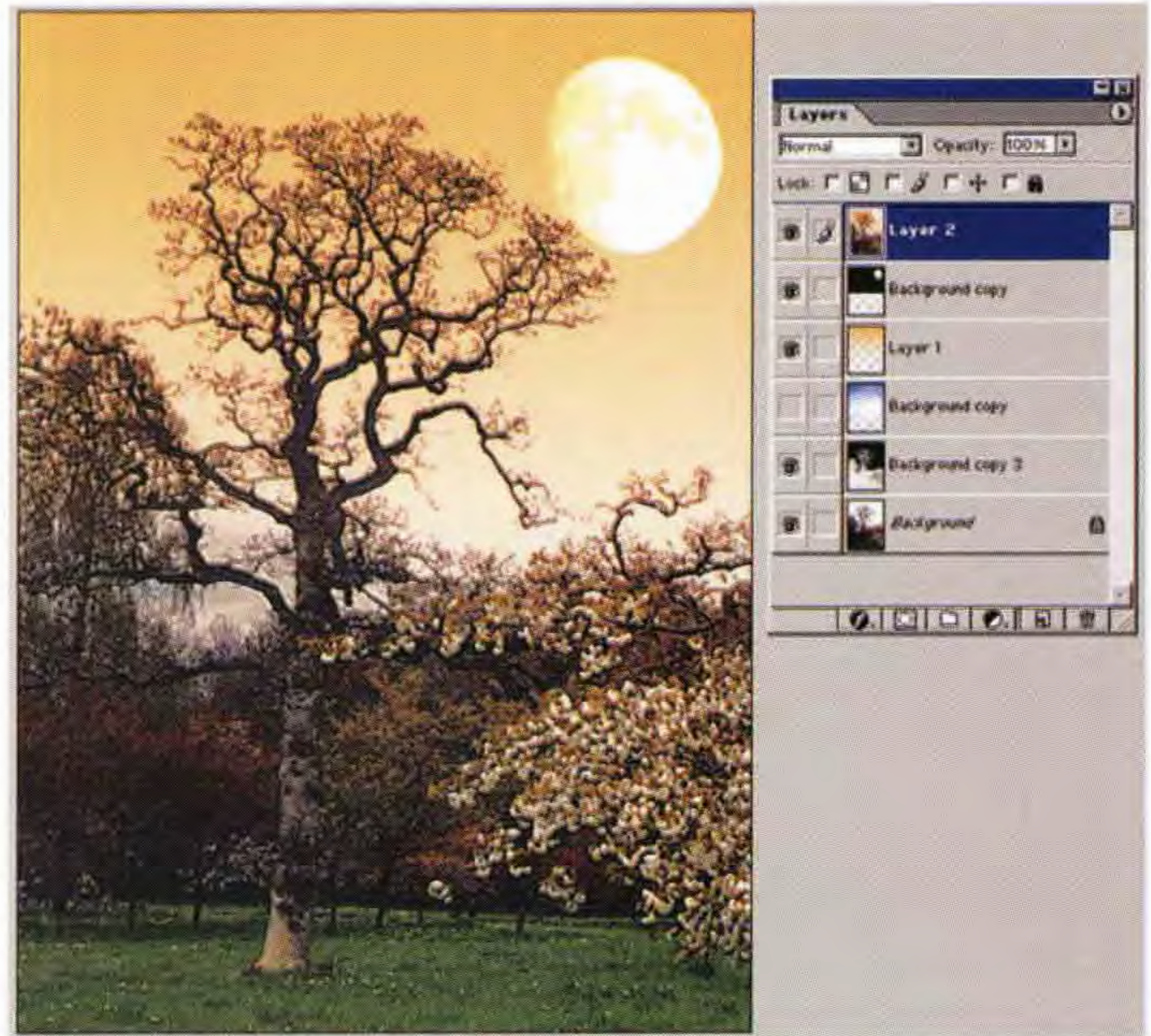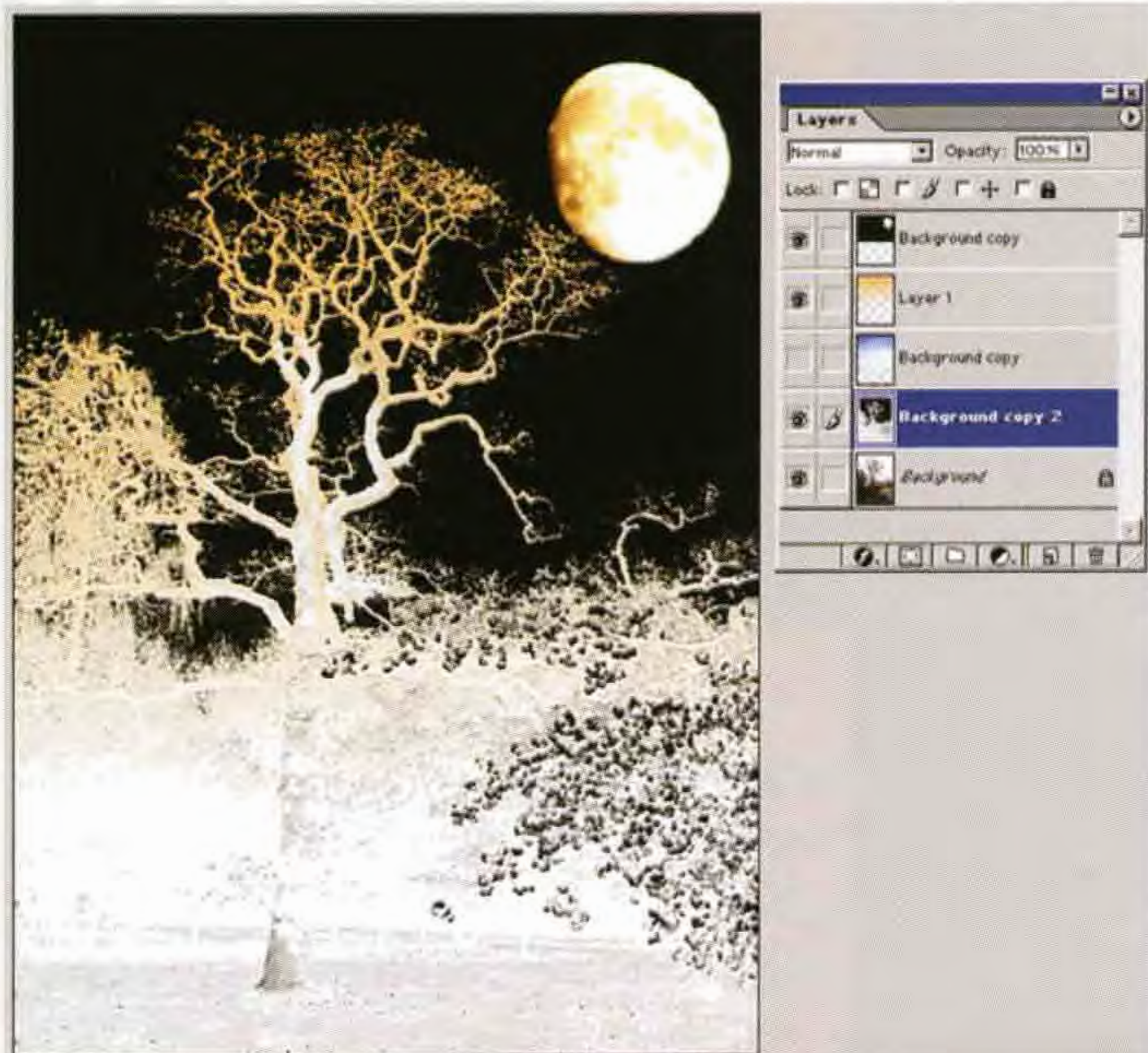
Change to Multiply mode   Black disappears and moon remains over orange sky
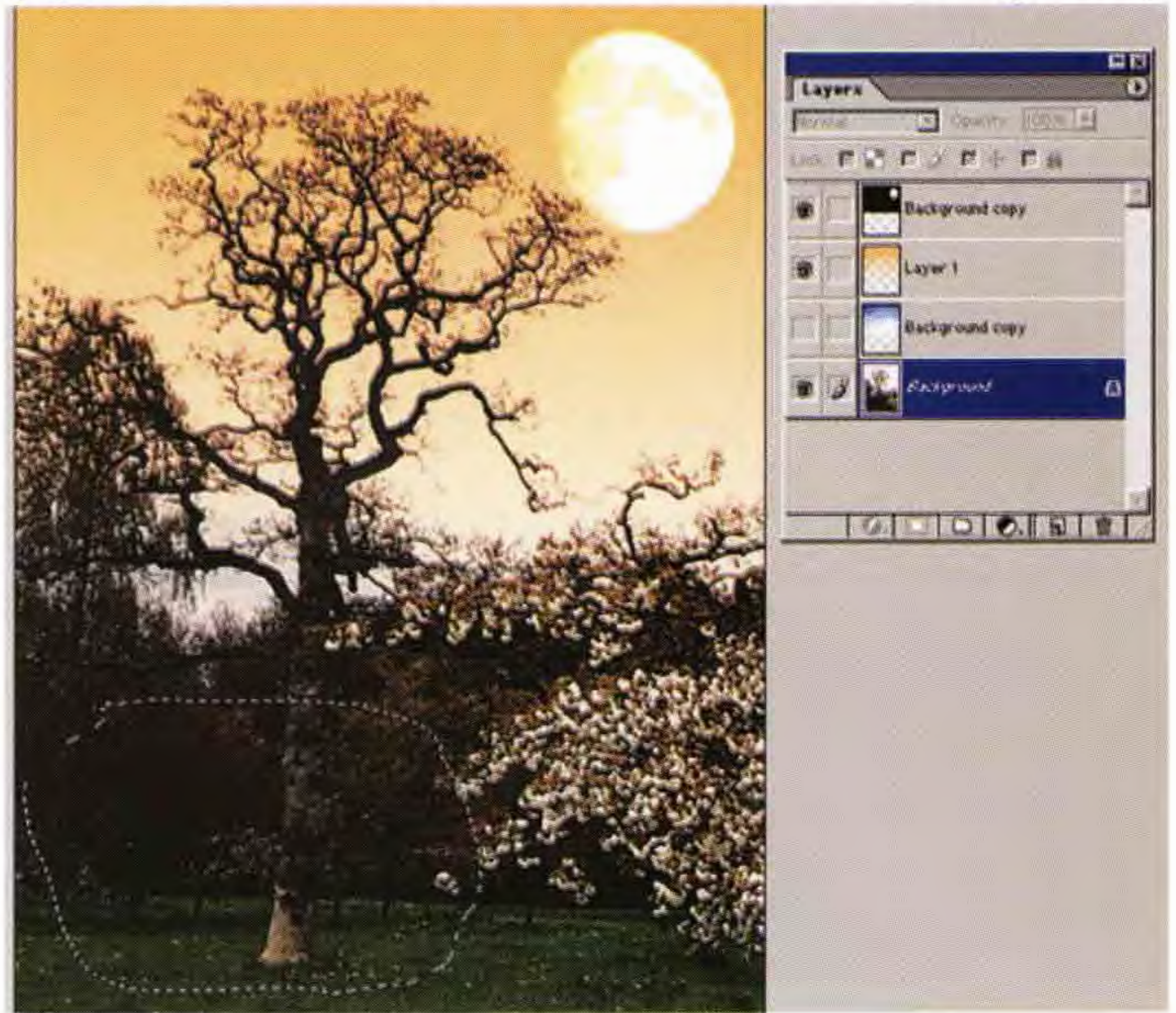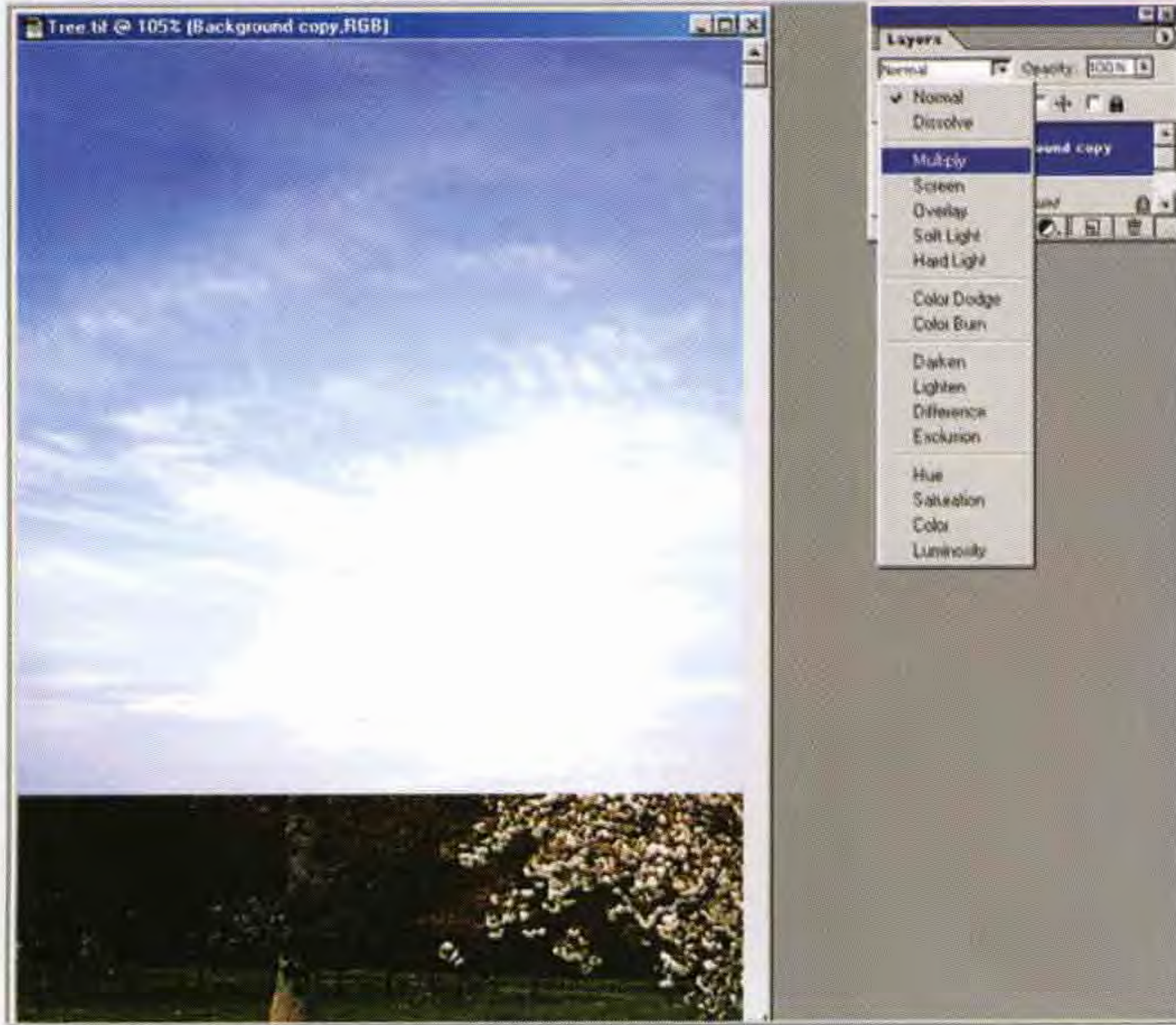
Negative to positive   Hold down Alt and click merge visible

Betty Billingham LRPS
Blending Modes
(see pages 8 @ 19)

Jim Buckley LRPS
Venice Images on
CD ROM
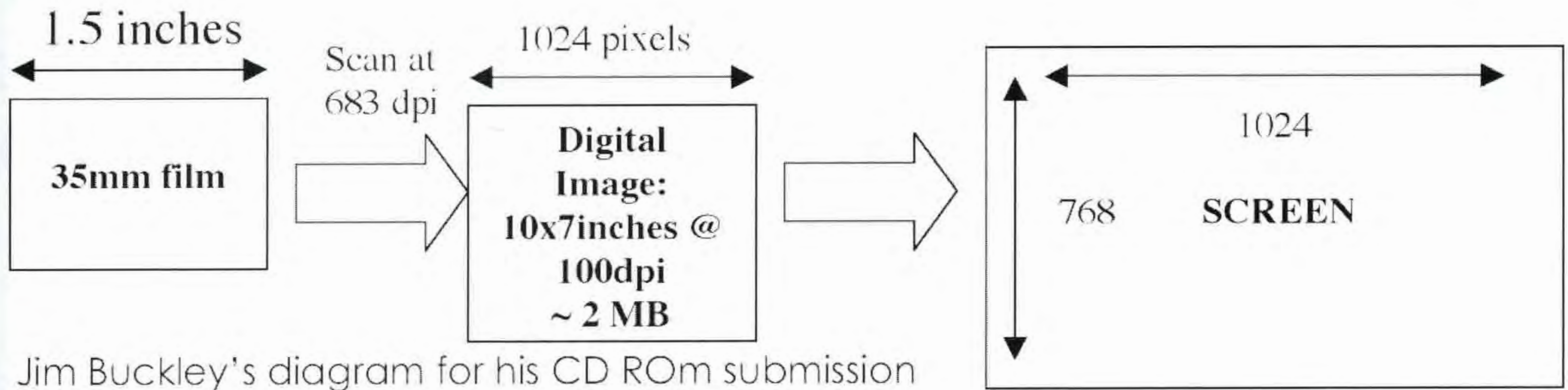(see page 7)

Jim Buckley LRPS

Venice

CD ROM submission
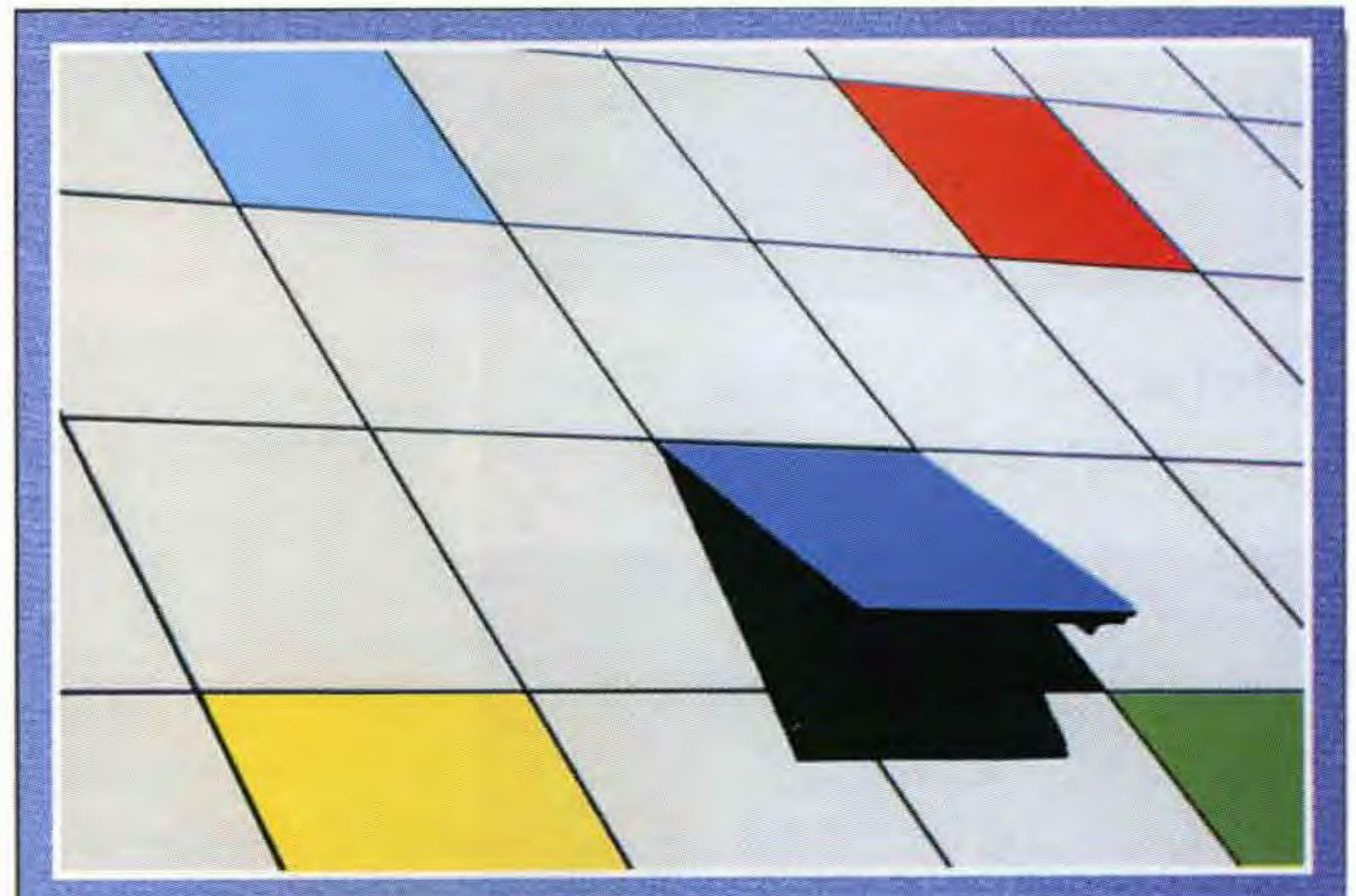

Tom Bowett FRPS

buZZ creations

Jim Buckley's diagram for his CD ROm submission

Phil Taylor ARPS :
on the DIG website he reviews
the Sigma 15-30mm lens
as used with the Canon D30.
These are example photographs

Baron Wood FRPS
Open Window in the Style of Mondrian
from the 2002 DIG Exhibition

Robin Mellor LRPS

11

"Honeybee" Canon EF 50 mm Macro.

"Jackmaniifly"
A deceptively simple shot of a little hoverfly
(Sysiphus) Fast little movers, these guysl
Canon 50mm EF Macro

"Trout Wood"
One of my flights of fancy,
Canon EF 28 - 135 IS

Warren S H Monks ARPS

Digital Camera Work
using the Canon D60

"SnailMail"
Canon EF 28-135 IS

Mansour Aubari
Geenwich Park

Peter Clarke ARPS
Florence Arch

One Man's Meat .... !

Not so very long ago, people were being told that there existed a cute way of taking photographs without using film. The pundits laughed loud and long because they knew very well that this was only a typical experiment being carried out by the little men in the far East. There would never ever be a time when photography wouldn't need film. Ho, ho, ho!

However, these gentry missed a vital fact. The little men from the East can always smell money! Film comes in all sorts of shapes, sizes and speeds. It needs developing and printing, fancy boxes, lots of expensive advertising to give it a cult identity etc, etc, etc. If something could be done about getting rid of all that and still matching or perhaps even bettering the results currently obtainable from the old-fashioned film stock, then this would be the way to go, and the money would just roll in by the shipload! The 'something' would henceforth be known as a Digital Camera.

To make this money-machine work, a small revolution was needed. You had to get people to buy computers, because without a means of down-loading the pretty pictures the idea was a non-starter. **You will note that I said 'people' not 'photographers'.** If you are going to make lots of serious money you need a world market, not just a few part-time snappers who meet once a week at the local school room or some such place.

The thing that got everybody buying computers was NOT the need to forgo film. It was simply that mail was expensive and relatively slow, and oft times irregular and uncertain. It had got through to the general public that there existed something called THE INTERNET which not only could provide lots of entertainment for the kids, but could also be used to send cheap, fast mail - anywhere in the world for the cost of a local telephone call. Trouble was, you needed a computer to effect this particular piece of magic and this was the wake-up call that the general public needed. Some might call it an excuse to keep up with the Jones's but the market for computers suddenly expanded beyond anyone's wildest dreams. Households were no longer considered complete without a white box, monitor, keyboard and mouse.

Bingo! The little men's dream had come true! The moneyboat had actually set sail for the Pacific basin!

Soon we were seeing an absolute plethora of little black or silver coloured digiboxes all of which claimed to be able to take pictures without the need for film. They were 'compacts' without the expensive nuisance of film and the visits to Boots. **People actually started to talk about 'pixels' because they now had a yardstick with which to compare their little box against some one else's!**

Suddenly, from being a set of 'doubting Thomases' we had a situation where the hoi polloi were airily telling anybody who would listen about how many million pixels their latest little box had got. They weren't really interested in the incredible definition these little picture cells were producing, just the magic numbers. Anything over 3million put you in the top bracket! Meanwhile back at the ranch, our very serious photographers were sitting up and taking notice. You never know, they thought, this might just get to be interesting to us real picture-makers!

So from discussing self focusing film cameras which use CCD's to make it happen, these worthies suddenly graduated to discussing the actual sizes of the CCD's in digital cameras. It occurred to one or two of the brighter members that if these same CCD's started to get near to the 24 x 36mm area currently occupied by the bit of film that you got your pictures on, then perhaps, just perhaps, we might get around to using the things for really serious photogging.

I make no excuses. I was not a true believer. I had seen the results from some of the lower echelons of the digital pack and thought they'll never catch on for us 'uns. How wrong can you get. The big names got on to the case and unbelievable pictures started to appear in the photo mags. **Take photo, transfer to laptop, get paid, in that order. Wonderful. Sliced bread just wasn't in it.**

I waited and waited, thinking that one day there's bound to be a digital camera that looks like my trusty Nikon, and do the things that it will do - but sans fillum. Sadly I realised that I could wait for ever, so I began doing my homework just to get to a level playing field.

I read everything I could find on the Internet about digital cameras, particularly the comments being made by actual camera users. Eventually, I arrived at the point where a model was chosen and moves made to find who had what I wanted. Surviving the shock of learning the price of my intended dreambox I then decided that my current gear ought to pay for it. It did. Just.

So what did I choose? I did the unthinkable, I changed makers. I moved from Nikon to Canon. Their new D60 apparently put right all the little problems experienced by their D30 - according to the users. (more importantly - I could actually buy TWO D60's for ONE DIX - and that's the bit that did it for me). Right from day-one of owning a digital camera I can honestly say I have never experienced a moment's regret. I have now been released from the disciplines of film, for ever!

I can now choose from 100 to 1000 ASA for each and every shot. I can tell right away whether the picture is any good, or whether the exposure is right, simply by calling up the histograms on the little rear screen. Looking and handling just like a normal 35mm camera, it attracts no special attention anywhere. The machine uses a Flashcard for its memory requirement. It's faster than a Microdrive and nothing like so delicate and it goes into a simple card reader which fits into the USB slot of my computer. In short it's a serious picture - taker's idea of paradise. It takes all sorts of lenses, from macro to mile-long stuff. It powers up in about two seconds and never misses a shot. What more could I want. I have tried it on slow stuff like tabletop and fast stuff like racing motorbikes. Works on anything. Brilliant. And it don't need fillum! Just wipe the Flashcard when you've got what you want to keep safely filed away inside your computer. I reckon I've already saved a fortune in film costs just on wasted shots. Print sizes? Is a top quality 20" x 30" big enough for you?

However, as I always say, put your money where your mouth is, Warren, so I have enclosed a few digigraphs to prove it. All the photography has been done with the D60. I don't suppose everyone entirely agrees with my style of photography, but just try this lot with film and see where that gets you!

Incidentally I do NOT work for Canon! They work for me!

Warren S H Monks ARPS

Obtaining a Lottery Grant
Derwent 2000:
a Heritage Lottery funded project

City Photographic, Derby, is an amateur camera club with about 40 members. It meets weekly from September to July, and has club walks on August evenings. In addition, it has a monthly meeting for members to study digital imaging. This is our Digital Tuesday, and attracts almost as many members as our weekly meetings.

The equipment for Digital Tuesdays is based on a member's laptop computer and the club's own Digital projector, a Phillips XG20 costing £2700. How did we afford it? Simple, an Arts for All Heritage Lottery Grant of just over £4000 for a club project.

Back in 1999, our club Chairman, broadcaster and all-round media enthusiast, Ashley Franklin, set us the task of creating a Millennium Project for Derby. Thus a photographic project was born, initially to record the River Derwent, which both rises and reaches its confluence with the Trent within Derbyshire county boundaries. We were offered the use of a prestigious photographic gallery, the Q Gallery in central Derby opposite the Cathedral, for our exhibition. Our Treasurer agreed that, if we were careful, we could manage to pay for such an exhibition, given that millennia don't happen all that often.

But the ideas grew: an audio-visual on the moods and aspects of the Derwent; a second audio-visual on the work of Jedediah Strutt, one of Derbyshire's founding fathers of the Industrial Revolution; an exhibition of members' own interpretations of the River Derwent, from pastoral to industrial, tranquil to torrent, a river at work and at play.

It was at about this time that someone mentioned Heritage Lottery Grants. So we applied for the forms from East Midlands Arts, held a committee meeting and revised our strategy. If we were successful with our grant bid, we would follow up all the ideas. If not, we would just hold the static exhibition in the Gallery, and fund it ourselves.

It is essential to read the terms and conditions of the lottery grants very carefully and to indicate to what extent your bid can meet them. Terms and conditions change, so very specific advice would be of no value to anyone considering a future bid. However, we met a number of the requirements by revising our plans a little. Here are some examples:

Technological Development:

a) We undertook to print our main sequence of 34 A3 Exhibition Prints entirely digitally. In 2000 that was unusual.

b) We included a public talk on Photoshop by Bob Rowe ARPS, then national organiser of the RPS Regional DI Groups.

c) We said we intended to make available to all members teaching on DI.

d) We undertook to work to make our audio-visuals work with the digital projector. This involved buying Delphi software and computer manuals and is still ongoing, but progressing well.

Community Involvement:

a)   **Free Exhibition**
b)   **Free Public talk on Photoshop**
c)   **Involvement with The Derwent Valley Preservation Trust**: we organised a second free public talk on the work of the Trust. This is the local pressure group which went on to gain from the United Nations the World Heritage Site Status for the Mills and Industrial Archaeology remains of the industrial revolution in the Derwent Valley.

d) We undertook to provide CD copies of our exhibition to all large Derbyshire Libraries and to secondary schools near the Derwent.

The Lottery's own requirements were many and varied:

A detailed bid involving some very careful thought and planning.

Commitments to cash or "in kind" contributions from our members. We used much of our own equipment for the events, drove thousands of miles, exposed thousands of shots, and gave up a lot of time to setting up, staffing and taking down the exhibition. Overall about three-quarters of the members took part in one

way or another, and enthusiasm grew so much that most members' partners were roped in to hang or staff the exhibition. Detailed accounting was needed, so our Treasurer with a spreadsheet accounted for every drawing pin; and yes, the accounts were questioned and explained, to the satisfaction of the Lottery organisers.

Guarantors as to our good faith and standing; kindly provided by the President of our photographic region, the North and East Midlands Photographic Federation, and the Derby City Councillor who held the Arts portfolio.

Statistics as to the number of people who saw the exhibition, by age, gender and ethnicity. In our case it was over 600, and in addition the organisers held the exhibition back over Christmas, so that a workshop led by the Arts Minister could take place in the Gallery.

A final report on the project within specific deadlines. Ours took the form of a book of photographs of the events which comprised Derwent 2000, and this was placed in East Midlands Arts archive of Lottery successes.

We found the Lottery people very helpful. The bid was submitted in May 2000 and by mid-July all the funds we requested were in our bank account, despite the fact that most of the expenditure did not fall till the Autumn, with the exhibition taking place in November - December 2000. We invited them to participate, though they never came. We kept them abreast of expenditure and they allowed variations, such as a change of model for the projector. When we saved money on the framing, they allowed us to spend more on the education element, so we bought a Barrie Thomas CD which has been much used, and this allowed us to bring the accounts in at less than £2 over budget.

It was hard work, but the club could never have afforded all that we did without the grant. And we are very proud of what we did. I think we were fortunate in many ways, not least in that Derbyshire was identified as one of the areas least successful in Lottery bids just a week after our bid was submitted. I have heard of a few other successful bids subsequently, and most of them were much less complicated than ours. It is certainly worth a try.

Peter Gill Dishart LRPS

Rye Beach

See the full set of images in Digit 17

For me, as for many other people, digital imaging offers a fascinating toolbox to play with. While few of the facilities available come as a surprise to me as a former industrial photographer, there is an undeniable appeal in having an easy-to-use computer package which virtually replicates the work which used to be carried out by highly-skilled and expensive graphic designers, retouchers, rostrum camera operators, etc.

An early interest of mine was using digital imaging to produce high colour saturation, somewhat inspired by the creative colour pioneer William Eggleston, who unlike most other photographers was able to afford the luxury of dye-transfer prints! The results of this project acquired the title "Parallax Perspectives" and are on view on my website at http://www.redstart.net/bebbington/index.html. I also produced a series of digital duotones working with 35 mm HP5 Plus ("Monoliths," also on the website) but found my Canon film scanner struggling with these silver-based negatives. Parallel to this, I continued to work in monochrome with my medium-format cameras. Whenever I feel a straight print is appropriate, I produce this in the darkroom on fibre-based chlorobromide paper and selenium-tone it, but I am always glad to turn to the computer when coloured toning is called for. This avoids all the mess and smell of chemical toners and saves money too. On these occasions, I make the softest possible 8x10" darkroom print and scan in on my modest HP flatbed scanner.

Variety is the spice of life, however, and from time to time I enjoy leaving the heavy equipment at home and working with a 35 mm camera and just a couple of lenses. Like many others, I have found chromogenic monochrome films (in my case, XP2 Plus) to be ideal materials,

giving excellent quality both in the darkroom and when scanned. I personally have no use for a digital camera, notwithstanding that I recognise the impressive stage of development which these have reached.

It was on one such occasion in January of 2001 that I went down to Rye Beach, just over the Kent/Sussex border. Weather conditions were ideal, with a clear sky and a strong low-angle sun, and exceptionally for Britain remained good for a couple of hours. I shot a total of 144 frames, almost all with my favourite Pentax 24 mm lens but occasionally with a 43 mm. The intention was to work in a semi-abstract way in the spirit of my earlier "Monoliths" series but without the (digital) technical limitations of silver-based film.

I sent the films to the Fuji Processing Laboratory and had the pictures scanned onto a CD. As I knew the scans would be JPEGs, opening up at maximum to around 6 MB, I anticipated that I would be able to use the results only for proofing, e-mail submissions, etc. However, on receiving the processed work, out of curiosity I interpolated one file to

Like many others, I have found chromogenic monochrome films (in my case, XP2 Plus) to be ideal materials, giving excellent quality both in the darkroom and when scanned.

40 MB. This may seem unnecessarily large, but to my mind it avoids the problem of being asked at short notice to produce a large replica file of a picture which someone wants to use but which only exists as a file which is too small! The raw interpolated file did not look very sharp, as one might imagine, but an application of unsharp masking produced an engraving-like quality which I found extremely appealing. I therefore went ahead and selected a set of 10 pictures for treatment in this way, interpolating to 300 dpi at A3 size, which gave file sizes of between 22 and 40 MB. Since the Fuji scans (and indeed many others) show a slight flattening of highlight detail, I tend not to print them as black and white but rather as digital duotones, which in combination with the tonal distortion I feel enhances the abstract quality of the pictures. These were otherwise hardly manipulated at all except to remove the inevitable dust spot and aesthetically unpleasing rubbish (aesthetically pleasing rubbish is always left in!). They were then converted to

duotones and finally to RGB files, since using the same duotone profile with all the greyscale images did not result in a totally consistent sepia and a final tweak of colour balance was necessary.

The resulting set of pictures first saw the light of day as a solo exhibition in the Quayside Brasserie, Sandwich, who show my work quite often. The full set of ten also appeared in my exhibition "Approaching the Landscape" at Margate Library in October 2001 and six examples were featured as "Portfolio of the Week"

(actually for 2 1/2 weeks!) on the BJ On-Line website at www.bjphoto.co.uk (well worth a look for the other portfolios on view). One example found its way into the RPS 144th International and sold at Letchworth (obviously a really big contemporary photography town!).

I feel that these pictures perhaps demonstrate yet again the fact that digital imaging can be the vehicle for a highly personal approach to photography and that while some workers produce wondrous montages and elaborate manipulations, it is also possible to operate in a less complex straight-ahead style and simply use the computer as an electronic darkroom. It perhaps also shows that while interpolating JPEG files to over 6 times their original size is theoretically wrong (and will certainly not give a good result in all cases), it can also sometimes work, like many other examples of rule-breaking.

David Bebbington ARPS

Optical Mouse

For some months now, on my computer I have been using an optical mouse -- an optically sensed mouse that is, not an optically coupled one.

As an eager user of Photoshop, I make lots of selections. Before turning to digital some four years ago, I frequently made masks, by hand, for darkroom printing in black & white so that I could employ different contrasts and exposures in different parts of my images, for optimal print quality. Now, typically I use four or five adjustment layers, usually Levels or Curves but sometimes Hue/Saturation or Brightness/Contrast also, to achieve the effect I want from my scanned negatives. Just as in the old days (the 90's are "the old days"?), I often need to make masks. Automated selection methods are a useful starting place, but I find that many refinements using a soft brush (sometimes at less than 100% opacity) are vital for accuracy. This is where a good, reliable mouse or other pointing device is vital.

We all know the problem don't we? Accumulation of dirt on the ball rollers causes the drawing of an irregular outline to become jerky and unreliable, and then it's out with the meths, a cotton bud and the clip part of a BIC ball-pen cap or a straightened paper clip to sort it out. And it is never the right time for this! Nor does a ball mouse ever seem to be as good after the treatment as when new.

I have put all that behind me. The sealed bulb and optical sensor on my mouse have yet to become dirty, show no sign of doing so, and continue to work like new. The best mat, to give the lamp/sensor combination something to 'see', is paper or card with fine, randomly distributed detail. For this, I use the inside surface of a corn-flakes packet, which is easily renewable and free too!

Why don't I use a Wacom or similar device? Price mainly, and partly convenience. One's hand drops naturally on to a mouse when used in conjunction with the keyboard (which I like for short-cuts), while surely the use of a pen gets tedious if it must repeatedly be picked up and put down, especially so when undertaking other computer tasks, such as word processing.

I purchased my 'Typhoon' optical mouse, with three buttons (one incorporated into the scroll wheel), from my local helpful, friendly computer shop for £19.99. Usual disclaimer.

John Tyler ARPS

PhotoShop 7

Without doubt Photoshop is the preferred image editor for most professionals and serious amateurs. Version 6 saw many changes in interface, colour management and tool enhancement. No sooner have we got used to the changes in 6 than 7 is now on the scene.

There is little obvious change when you open 7. Adobe have attempted to modernise the toolbox by making each of the tool icons change colour slightly as the mouse curser passes over them. I must say that having an icon change from grey to white when active, as was the case in 6 was much more distinct and easy to see.

Whilst taking no credit I did suggest when reviewing Photoshop Elements that Adobe should include the Elements image browser in the next incarnation of its parent. This innovation is the biggest change in 7. The File Browser which you can dock in the palette well has four panes. A tree pane that displays drives files and folders on your system. A preview pane which shows the current thumbnail selection. A data pane which displays the images file name image format and a thumbnail pane to display the images in the selected file Three sizes of thumbnail are available The File Browser also allows you to change the size of any or all the four default panes to suit your requirements. You can also create a ranking system to identify and group images, and then sort and classify files on importance and quality. I might add that the CompuPic Pro browser I currently use, allows me to drag images into the browser from other computers on my Network, but I was soundly told off by Photoshop when I tried it in 7.

The set of Automatic image correction tools have now been complemented by the introduction of the Auto colour feature. If after making adjustments with Auto Levels and Auto contrast you have a colour cast in the neutral values you can now use Auto Colour to get rid of the cast
There are two new tools in the toolbox.

The Healing brush and the Patch tool are as their names suggest repairing tools. The Healing brush is in certain circumstances a much better and easier tool to use than the Cloning tool which it is meant to complement. Its best use for me is in Portrait work. For example, a skin flaw on a persons cheek. Select the Healing brush, size it to cover the area you wish to heal. Alt Click on an adjacent similar area, with the brush over the flaw release the Alt key and voila the area is healed. The clever bit with this tool is that the brush blends the area around the flaw and the repair is virtually indistinguishable from the surrounding area.

The Patch tool works in much the same way as the Healing brush except that you create a selection from which to sample. Selecting the Patch tool, then click Source on the Options bar, positioning the curser in the image changes it into a lasso tool. Select the area to be change, place the curser in the middle of the selection and the icon becomes the Patch tool. Click and drag the selection over an unblemished area and release the mouse button. The Patch tool samples the unblemished area and replaces the source area, blending tones and colours for a quality correction.

The new Photoshop painting engine is quite something. This has always been a shortfall on Adobe's part and the reason why a lot of people used Painter, Deep Paint and other similar programmes. To a great extent this has been remedied in 7. The new brush palette has fifty or more presets. These include Rag, Sea Sponge, Stencil, Mesh and six different types of watercolour brushes. It's only when you scroll down the brush pallet that you come to the really whacky brushes, these include Petal Crystals, Butterflies, Ivy leaves, Ducks not in a Row and Scattered Roses. Don't ask what you would do with them. These are only the default brushes and can be supplemented by loading numerous libraries. The amount of control you have with each brush is quite amazing. Apart from being able to change the brush tip setting, shape, size, spacing and angle as in P6, you can now control scatter, noise, texture and smoothing. For those into painting P7 is in a new league with all the latest controls.

Liquify and Extract have now been moved to the filter menu together with the new Pattern Maker command. This new feature also has its own interface. Selecting an area and clicking Generate gives a repeating pattern. If you click on Generate again

you get a further variation. By comparison with KPT, this is a very primitive pattern maker.

There are five new blending modes, changes to the Text Tool palettes, an ability to save palette arrangements and a number of other minor enhancements.

Photoshop 7 also includes Image Ready 7.

The main changes in ImageReady are an updated Rollover palette and a new Variables dialogue.

Photoshop7 is quite a small upgrade to the programme by comparison to the vast improvements in 6. Many Photoshop users will by now have settled down to use one of the many excellent browsers on the market and may find the facilities in the7 browser somewhat restricting. The paintbrush and other tool improvements will keep most photographers happy, but whether the changes from a photographers point of view sis worth the cost of the upgrade from 6 is debateable.

System Requirements.
Pentium or better, 128Mb of RAM,
100Mb Hard Disc. Windows 98, ME,
NT4, XP and 2000.
Macintosh OS9.1 and OS X .
Cos.t £529 inc VAT.
Upgrade £116 inc VAT.
Suppliers. Adobe 020 8606 4001.
Exchange International
+44 (0) 20 7588 5588.

Sid Pearce FRPS EFIAP

Totally Digital
(almost)

For over six months I had been toying with the idea of buying a digital camera. This would have meant that with the exception of almost 20,000 transparencies still to scan, all else would be digital. Almost fifty years have gone by since my first foray into photography with a Box Brownie which was quite light in weight, to the first Nikkormat and then onto Nikon F, F2, F3 F4 and then F90X . What with the bodies, lenses etc, my shoulder has got closer and closer to the ground. Being of a certain age, carrying what feels at times like a Bergen Rucksack, has not helped the old Arthritis either. Bearing all this in mind I went into the

pros and cons of purchasing a digicam with some alacrity. I soon found that it was not going to be as easy as I had first thought. While camera manufacturers give the impression that buying a digital camera is much the same as any other camera purchase, in reality it's rather different. For starters unless you have a budget of several thousands a quality digital SLR is out of the question. This meant that currently I had to look at a compact as I would be 6ft down and sodded under before a quality digital SLR was within my remit. I then decided to make a wish list of what I realistically wanted in the digicam of my dreams. Light in weight, f2.8 lens 24-120 zoom with macro, shutter speed 1/4000 to 10 seconds, manual and auto focusing, aperture and shutter priority exposure control. With a pile of camera mags to look through, the search was on. I soon realised that as I usually printed to A3 size I would need a 5 mega pixel camera. Current owners of digicams had told me that you could get away with 3.5 mega pixels (9 to 10 mb file) but being a belt and braces man I felt 5 megs would be better to aim for.

While I was prepared to compromise on something's, I felt file size was not one of them. After several weeks looking on the net, asking people and reading enumerable leaflets I decided in June last, that there was nothing available that would satisfy me at that time.
Keeping an eye out on the net and looking at Canon, Nikon and Olympus Web sites my patience was finally rewarded in October with the announcement of several new cameras by these companies. Being a Nikon addict I was quickly drawn to the specification of the Coolpix 5000.
Since I need to print to A3 size, its 5

effective Mega pixels, was the big draw. While I would have liked a longer zoom than 28- to 85mm. (35mm equivalent) I new the lens would be first class. With 3 frames per second advertised I also knew the time between focussing, pressing the button and the picture registering had to be quick. The time lag on a lot of the early digital cameras has been somewhat off

putting. This looked as though it was the camera for me but I would have to wait until its release in January 2002.

During the months that followed, I avidly read everything about the 5000. A big plus was that it would support the IBM 1GB Minidisc, which I had already decided was a necessity if I wanted the largest file size for A3prints. Battery life was also a consideration. Apart from 100 minutes when using the monitor, there was also the option of a battery pack using 6 AAs. At least carrying a few batteries through the Sahara was better than a dead camera with no means of recharging its battery. January soon came around, and the camera was out, but where to buy from? While I wanted to purchase from a reliable source, I knew there would be big variations in price. Jacobs and Jessops were both asking the Nikon suggested selling price of around £1,000 which was a little surprising. After a few phone calls around the country I settled on Warners of Wolverhampton. Their Paul Gomery was both knowledgeable and helpful and gave the most reasonable price of £875inc Vat and Securicor delivery. It arrived the next day as promised.

The camera price included a CF type II 32mb storage card but as this was too small for the file size I required (2 images Fine) I started looking for a good price on the 1GB Microdrive (75 images Fine. 81 images Fine. 3 by 2 format). Scan International gave the best price at £198 plus £10 delivery.

Now was the time to get used to the camera. First impressions were that it was very small and weighed little (12oz). It almost disappeared in my large hands. The manual as usual for Nikon is a massive 207 pages long, and gives you the impression of needing to pass a test to qualify to drive. There is a mass of settings on the monitor, many of which can be ignored and left on auto until you are more proficient in the cameras use. One setting I have used from day one is (BSS)!! This setting allows you to take up to 10 shots and automatically selects the sharpest. With my quivering old hands this is a great boon. Apart from the built in Speedlight there is an accessory shoe for my old SB17 flash to fit on. I must admit the viewfinder is very small and difficult to use which means I frame with the monitor. (You get a 97% view of the image) This can also be awkward if you don't shield it from the light at certain angles. An increase in the monitor contrast helped. For those with no aspirations to

manipulate and produce exhibition size A3/A4 prints, the camera supports "PRINT Image Matching" (PIM) technology developed by Epson. You can only use it if you have a printer that supports the same facility.

Well enough of the old guff. Was it worth it and does it live up to the advertising. The answer is an unequivocal YES. Like a new car, the seat was in the wrong position, the gearlever didn't fall to hand, but after using it for a month it is beginning to feel like an old shoe. I can stuff it in my pocket at a moments notice. Go out and take some pictures and within hours they are in the computer, on with the printer and out comes the print. At least that's the theory. No waiting for processing and no more film to buy. I must say the range of tones you get and the sharpness from the Nikkor lens is stunning. Even some of my die hard camera club mates reluctantly agree.

To complement the camera I now have to purchase the Battery Pack, a 19mm wide angle converter, a telephoto converter and a monitor hood. Would that buying a new camera was not so difficult and expensive. I suppose I will have to sell my F90X, 24-120 and 28-200 Nikkors to finance the purchase!! Any offers?

Sid Pearce FRPS EFIAP
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Quantity for Quality

How much memory does that image really need?

Why worry?

Modern computers and software can cope with enormous image files, and it is tempting to work with images scanned in, or read from Photo-CD, at the highest available resolution, to ensure that no quality is lost. Unfortunately, the huge image files that result from this approach have two drawbacks. They are slow to manipulate, and they eat up storage space on your computer. Storage need not be a serious problem if you keep only your current work images on the hard drive, and shunt all others out to writable CDs or Zip discs. The time taken to process big files is the real pain. If you have a taste for fancy image filters and a computer

with a modest specification, you may suffer a dramatic increase in coffee consumption!

Why is so much memory needed?

Even if you've fitted what seemed a lot of memory (RAM) to your computer, it is easy to run short when working on images. Everything running in the machine wants memory. The operating system grabs a few megabytes before you even run a program. It also reserves sizeable chunks for buffer storage, to make your discs seem to run faster. The photo-editing program shares what is left with the image that you are working on.

The image, as far as the program is concerned, is just a large number of dots (pixels). For colour, each pixel needs 3 bytes to store the amount of red, green and blue. If your image is 3,000 x 2,000 pixels, it takes 18 million bytes of memory in colour, (only 6 million in greyscale). Whenever you change something in an image, the program keeps a copy of the unchanged image, to allow a quick "Undo" of the change. You are now using 36 million bytes. If you are using layers, each one is itself an image taking further memory, so it is easy to use up all of that precious RAM.

When the program asks the operating system for more RAM and there is no more available, parts of the memory that are not currently being accessed are stored temporarily on the hard disc as a "swap file", making RAM available to meet the needs. As writing to and reading from disc are relatively slow operations, everything slows down. If you find that processing big images takes dramatically longer, and is accompanied by a continuous stream of clicks and pattering noises from the computer case, you will benefit from fitting more RAM or from being less ambitious in your choice of image size.

What image size should I use?

You decide how many pixels to have in your image when you scan the original photograph, or read the image from a Photo-CD. You don't want to lose final image quality, but how many pixels are really needed?

By the way, don't get obsessed with dpi (dots per inch). Once the image is in the computer, all that matters is the number of pixels. If I scan in a slide with my Coolscan at 2700 dpi, the resulting image

is described as about 1_" x 1" with a resolution of 2700 dpi, but what counts is that the computer has an image of 3835 x 2560 pixels. If I make a print 10 inches long, it will have about 384 dpi, while a 5 inch print would have 767 dpi. This is of interest mainly to the printing industry - we know that big images still look sharp when viewed at a sensible distance, or we'd never look at projected slides.

There is little point in handling and storing an image with more pixels than can really be used, and there are several stages at which limits can take effect. You will save space without losing anything if you:

Don't try to record detail that isn't present in the image

Don't let a scanner invent detail that it hasn't measured

Don't give the printer detail that it can't print

Don't try to include more detail than can be seen in a print.

Let's look at these one by one.

Camera

Modern lenses and films generally perform well, and the best 35 mm. systems can record over 100 line pairs per millimetre under ideal test conditions. However, we don't take pictures on optical test benches. Even if we use firm tripods, our subjects have depth and possibly movement. If we achieve 50 line pairs per millimetre over the whole frame we are doing really well. To record each line pair takes 2 rows of pixels, so for a 36 x 24 mm. frame this translates to 3600 x 2400 pixels. With 3 bytes per pixel this needs 24.7 MB (1 MB = 1,048,576 bytes). Larger format systems can justify more, but not quite in proportion to the frame area, because lenses that cover a larger format don't pack quite so much detail into each millimetre.

Scanner

A good 35 mm. format scanner, such as a Nikon Coolscan, can measure up to 3835 x 2560 pixels from the frame area, giving an image of 28.1 MB. Many flatbed scanners quote high "interpolated" resolutions running into thousands of dpi, when they typically measure perhaps 600 dpi on one axis and 300 dpi on the other. Don't be fooled. Interpolated pixels carry no extra detail. Even the true (optical)

resolution of flatbed scanners can easily give you far more pixels than are justified by the quality of the original.

Many people without scanners get their images into the computer by having them recorded on Photo-CDs. The normal mass-market disc can hold up to about 100 compressed images. Each of these can be opened at 5 levels of detail, the highest giving 3072 x 2048 pixels, taking 18 MB of memory.

Printer

Calculations here are slightly tricky, because printer manufacturers don't give the figures that you actually need. The currently popular Epson Stylus inkjet printers claim to put 1440 dots per inch onto suitable paper, but this doesn't mean 1440 pixels per inch. Clusters of coloured dots are used for each pixel, to allow the half-tones to be represented. Using an established rule of thumb, the pixel density is probably about a sixth of this, equivalent to 9.5 pixels per millimetre. A 400 x 280 mm. (A3) print at this resolution would need a 28.9 MB file to give the finest printable detail.

The Eye

In normal daylight, a good human eye can separate details about 1 minute of arc apart. This means that at a viewing range of 1 metre, details down to 0.29 mm. apart can be seen. Taking the detail to be single pixels, each separated by 1 of a different colour, the pixels must be 0.145 mm. wide, and an A3 print 400 x 280 mm. will need an image of 15.2 MB.

Conclusions

If you are planning to produce prints on A3 paper, to be viewed from about 1 metre, use final (flattened or merged single layer) images of 15 to 20 MB. Any more than this and you are handling detail that won't be seen. A well produced Photo-CD at its highest detail level seems to be just right for sharp images.

Is there any advantage to be had from the larger files that cameras and scanners appear to justify? Is it just "specmanship" by the manufacturers? The benefit that I can see is in the ability to use around half of the original image to get the 15 MB that you actually need. This degree of selective enlargement has long been practical in the darkroom and the digital worker should not be excluded.

I'm aware that suggesting the adequacy of modest image sizes is a bit heretical when 4000 dpi scanners are becoming trendy, but the conclusions are supported by experience. Have you seen the quality obtainable from a 3.3 megapixel digital camera? I wouldn't choose one for traditional architectural work, but for most types of subject matter the images can reasonably be printed up to A3. The image as printed is about 10 MB, though it is interesting that the camera would normally have had it compressed for storage into about 1MB. JPEG and other compression techniques are much maligned, but that is another topic.

Peter Gill Dishart LRPS

From: Mike Brown
[mikebrown@hg29hh.freeserve.co.uk]
To digit@lists.wycliffecollege.com
Subject: Re: DIGIT - slide scanner second hand
Hi Krystyna,
If you do not wish to invest in a new state-of-the-art slide copier, you can photograph slides using the macro facility on a digital camera such as the Nikon 990 or 995.

The resolution does not match the best modern scanners but it provides fairly good results for prints up to A4 size. Whether this is satisfactory depends on what your applications are

There is an attachment for the Nikons which I think markets from about £40 but I have been using an old 35 mm slide hand viewer, with a translucent back, to hold the slides. I use natural daylight illumination but take care not to expose the camera lens to stray light ..

The results are more than adequate for family picture and illustrations but perhaps not for competitions if resolution is an issue. The results are comparable with the old Canoscan 2700F slide scanner. The resolution is almost as good and the colour rendering is better. Copying is far quicker.

Cheers, Mike
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Blending Modes
contd from page eight

Change to either Overlay Blending Mode or Soft Light Blending Mode, whichever looks better in your picture. Overlay is used to add contrast.
Reduce the opacity if necessary, to suit the image.
Go to the top layer and click on the New Layer icon to make a new blank layer (it will automatically come in over the layer you are working on, highlighted in blue and with the brush icon showing)
Hold down Alt as you go to the little arrow top right on the layers palette and click on Merge Visible. A picture will appear combining trees with the evening sky. Because the eye on your blue sky layer is still closed, it will not have been combined.

Illustration: Hold down Alt and click Merge visible (colour page 9)

Now make yet another empty new layer at the top, close the eyes on those layers with the evening sky and moon, open the eyes on the blue sky layer, and again hold down Alt and click Merge Visible to make the second, daytime, picture..
This method combines only those layers which are open at the time. It is very useful for trying out different effects by putting different layers together. You can also print directly from the combined layer without having to flatten your picture first. I usually store my picture in layer form (.psd) on CD so that at a future date I can retrieve a single layer to combine with another picture.

Betty Billingham LRPS

buZZ Pro 2.0

Following the review in Digit 17 I purchased buZZ Pro 2.0 software and have been having much fun with it. Perhaps it would be good to have a gallery showing different approaches that members have had with this plugin. I am pleased to show examples of my efforts. (see colour page 10)
Tom Bowett ARPS

The editor apologises for the delay in acknowledging and publishing some of the material in this issue of DIGIT

Who mailed your DIGIT?

I am sure that at least one of my readers must at some time been asked to stuff envelopes for a multiple mailing. You have just received this edition of our excellent magazine, and I hope that it arrived safely. How did it get to you - well first of all the boxes of magazines had to be collected from the printer, then individual magazines inserted into envelopes before sealing by means of that wonderful self-seal arrangement. Now all that remains is the address label, and these are provided upon request from the membership department at the RPS from the computer membership database. They have to be removed from the release-coated sheets and one stuck to each envelope. All very easy you may say - yes, but please bear in mind there are over 900 members in the Digital Imaging Group and each one has to receive a copy of the latest edition of DIGIT! Next is the journey to the nearest General Post Office to purchase 900 stamps and to stick them onto the envelopes - and this is where I raise my hands and say "No way!" The reason for all this blurb is to tell you that the last edition of DIGIT was taken to the Royal Mail and handed over the counter for them to put each one through their Franking Machine. . . . and here is the problem, as quite a number of you received your envelope from Postman Pat with a request to pay about £1.40 as the envelope was "unstamped"   I am sure some of you may have paid up and thought the magazine was worth it - but a number of you complained and we took the matter up with Royal Mail Complaints Department.
We have received an apology and a small sum of money as a refund and in turn, we unreservedly apologise to you, the members who were inconvenienced.
Would anyone like to help mail the next edition??

John.A.Long ARPS
(Envelope stuffer and mailer)

Submitting Material for DIGIT and the Website

Both John Long and Glenys Taylor can amend and add information on the website. Glenys can subscribe and unsubscribe members to the DIGIT and Folio listserver.

Material for DIGIT may be emailed or posted to Bill Henley. Images and text on CD ROM are welcome. WORD or Rich Text Format files are acceptable. Images may be saved as PSD, JPEG, BMP or TIFF files. A rule of thumb is to save a file size suitable for a 6 x 4 inch image at 200 dpi.

Bill Henley, DIGIT Editor, Old Manse, Middleyard, Kings Stanley, Stonehouse, Gloucestershire, GL10 3QD

Please keep John Long informed of any events that you would like advertised on the website. Please include non RPS events, exhibitions, publications and programmes in which DIG members may be interested.

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