DIGIT

Spring 2005
No 26

D.I.G.
Digital Imaging Group

In this issue of your magazine:

Chalk and Cheese by Peter Roberts ARPS

Our thanks to Permajet for sponsoring the packing and postage of this edition of DIGIT

From the Chairman

It is our Exhibition time again. The selection date is Sunday 24 April and we are once again at the Smethwick PS Club room. This year the selectors will be Bill Henley LRPS, Sheila Read FRPS and Bob Moore Hon FRPS who will also give the lecture in the afternoon. Remember, if you enter the Exhibition you are guaranteed of an acceptance and the accepted images will all be published in the catalogue edition of DIGIT and on the web site.

John Long ARPS will be retiring as the Exhibition co-ordinator at the AGM and Clive Bailey is also standing down. A big thank you to John for all his efforts on the exhibition over the years and to Clive for his publicity work. Thank you to Alex Dufty who has volunteered to take over from John.

Looking forward, we have a Celebration of Distinctions on 19 June giving those of you who have gained distinctions with digital work an opportunity to show your successful panels. If you gained your distinction with images on CD please send us a CD even if you are unable to come to the meeting. Also, there will be lectures by David Rowley and a studio session led by Graham Whistler FRPS.

Also for your diaries, this year the Spectacular will be on 13 November at Rugby.

Barry Senior FRPS

What's on Where: a selection

For full information visit the organisations' websites and see the DIGIT website

15, 16 and 17 April
Wessex DI Group
Weekend of digital AV Tutorials with Richard Brown & Ian Bateman

24 April
DI Group AGM and exhibition selection at Smethwick

8 May
Midlands DI Group
Bob Rowe ARPS

15 May
East Midlands
L Panel meeting

19 June
DI Group
A Celebration of Digital Distinctions at Smethwick

26 June
Wessex DI Group
Members Day – Bring work & mini demonstrations

17 July
Midlands DI Group
DI Workshops

13 November DI Group
Spectacular at Rugby

Digit is the quarterly magazine of the digital imaging group of the Royal Photographic Society. We welcome contributions from all members on any aspect of our special interest. Please send all contributions - articles, photographs, comments - to the editor, Jim Buckley at *jimbuckley.baltic@btinternet.com*

DISTINCTION SUCCESSES

We are delighted to congratulate the following DIGIT members who have recently gained distinctions. If we have missed your name from the RPS records, sincere apologies and do please let us know of your successes. It is good to see both Cuba and Australia feature in this group.

LRPS: Robert Ashton; Freda Lobato; Joseph Brennan; Mike Clibbens; Fiona Pearson; Carole Hallett; Teresa Szulecka; Alison Crawley; Richenda Carey; Guillerno Bello; Lynda Clare; Pamela Curtis; Margaret Stevens.
ARPS: Shirley Britton; June Cook; Gillian Dishart; Charles Frewin; Antonis Karydis; John Lawton; Joanne Searle; Teresa Szulecka.
FRPS: Dr Barry Senior

ANNUAL GENERAL MEETING NOTICE

The AGM of the Digital Imaging Group will be held at 10.30 on Sunday 24 April 2005 at The Smethwick Photographic Society, Oldbury, West Midlands.

The AGM will be followed by the selection of prints for the Group's Annual Exhibition. Bob Moore FRPS will give the afternoon lecture. Free entry for Digital Group members and partners. Non-members £5, pay at the door. Please bring a packed lunch.

Nominations for committee posts to: Glenys Taylor ARPS, 10 Shoreditch Road, Taunton, Somerset TA1 3BU. Email: *glenys.taylor@tiscali.co.uk*

Dr A R Sethna FRPS AFIAP: A very distinguished Fellow

Always a charming and elegant figure, Dr Adi Sethna is well known in the Royal Photographic Society and particularly in digital imaging circles. Now in his 80th year he gave DIGIT magazine some insight into his personal background and his approach to photography in a talk with Geoffrey Carver LRPS.

With two years as vice-president, his service for the Royal Photographic Society is well chronicled. But his interesting roots are perhaps less well known. The author of a number of pamphlets and books as well as tutorial CDs, he was born in Mumbai (formerly Bombay) back in 1925. His father was an accountant who helped set up both the St John's Ambulance and Boy Scouts groups in India. Adi himself started photography in his teens and with his brother made an enlarger at home for black and white printing. However, his training was in medicine and, after qualifying in India, he came to the UK in 1953 when he was 28. He married a couple of years later and today enjoys two daughters and a son, along with a number of grandchildren some of which I suspect we've seen featured in his images. Indeed I can remember him talking at one of the Rugby Spectaculars about how he could easily use a roll of film when his latest grandchild came to visit!

When he became member of the Royal College of Physicians, he focused on heart surgery, returning to India for a short while before coming back with a change of direction to pursue psychiatry. Adi recalls that his temperament made him well suited to psychiatry and he certainly comes across as a calm, listening and humane person from whom one could seek help. Intriguingly, he found photography a welcome form of therapy from his own stresses as a consultant psychiatrist.

Fellow medics have the distinction of encouraging him into the RPS fold with a meeting at Sutton Coldfield. From then on, he explains, he was hooked although he did have to be bullied into submitting a portfolio in the nature category for his Associateship. His Fellowship followed in the applied category with a panel of Cibachromes of tropical fish. Digital imaging started for Adi, like so many of us, with one of those eye-opening sessions from Barrie Thomas. Today it is one of the joys of his life. Adi feels he is able to express emotions, feelings and mood through his pictures. Digital imaging has been a great liberator he explains. In addition he dabbled in stereo photography.

Since retiring he has travelled a good deal, covering most of Europe and the Middle East as well as Zanzibar and Thailand. Photography and travelling go hand in hand for Adi and those travels have provided some of the images which feature in the tutorials written with Peter Clark FRPS.

Obviously a natural communicator, Adi says that most of all he has enjoyed lecturing, talking and demonstrating to help others widen their horizons to allow expression through images. In 2004 his long and distinguished career in photography was crowned when he was awarded the Fenton Medal - and an honorary membership - by the Society.

His website *http://www.btinternet.com/~eddy.sethna/index.ht* contains not only beautiful pictures but also many useful tips, and links to his tutorial CDs.

Korean War Memorial, Washington DC

The Platoon

Martin Elder is usually a colour worker but here he shows us some monochrome work. Starting in a medical laboratory provided photographic training, including processing Ferrania slides (10ASA) and glass lantern slides. He even photographed the growth rate of tadpoles. As an international consultancy manager in the water industry his cameras accompanied him to beautiful places. Now an occupational consultant he spends most of his working time with people. Seven years ago Barrie Thomas convinced Martin to throw away his deep tank processing darkroom and to go digital.

Washington DC as a city has much to offer the sightseer in the way of architectural splendour, superb museums, a wide range of art galleries and great open places.

Seven years ago my son went to live in Washington, so two or three trips across the pond each year since has become the norm. Exploration of the city's cultural treasures began with particular interest in photographing anything that would lead to the creation of images that could be used to adorn 'vacant' wall space if considered good enough by the number one critic in the household

Soon the choice of subjects available in Washington tended to be narrowed down to the two strongest personal 'artistic' passions held, these being photography and steel sculpture and many safaris were conducted in searching out such material. Having had some form of skills training in both has led to merging the two in the creation of images often with apologies to the great masters of the past.

Looking through the viewfinder of the camera, posing, focussing and then framing followed by print work in whatever form, presents a similar thrill to controlling the placing of running molten steel on preformed skeletal forms, building up the 'body' to produce the original conception. One such subject offering the merge of both artistic passions lay within the National Park site adjacent to the Lincoln Memorial in Washington's central park area.

The Korean War Memorial consists of nineteen life-sized stainless steel soldiers making their way over ground designed to suggest the rugged Korean terrain, with the patrol's windblown ponchos highlighting

Face of a warrior

the harsh weather conditions, as seen above in *The Platoon.*

World War II veteran Frank Gaylord was the sculptor who created these statues making each one unique but representing the mix of cultures found in the US armed Forces. A polished black granite wall with many etched faces of service people representing all who played their part during the war also mirrors the forms of the platoon soldiers.

Several visits have been made to the memorial in a variety of weathers. Some days the site was very busy being visited by people from all over the world, taking photographs using all forms of camera, when on other days for no apparent reason the site was found to be quiet offering time for reflection and pondering on what had happened back in 1950-1953. By photographing each soldier on

Platoon Soldiers

an individual basis, staring into the faces and noting the features portrayed, absorbing the fine detail of the body figures and assessing the assorted weaponry, one could not help but go through a series of emotions whilst conjuring up what these men had to endure in a land far away from home.

The Lieutenant

Putting all of this together, the resulting images were consciously selected as favourite ones, powerful ones and sad ones whilst the subconscious placing of these warriors into simulated backgrounds began to happen.

Photoshop was the main editing program used with assistance from Painter and Buzz Pro.

The Platoon, Platoon Soldier and *Face of a Warrior* are displayed with the minimum of tweaking representing the memorial/sculptures as is. For The *Lieutenant* three figures were selected using Quick Mask, extracted and then placed within the composition using different

Moving Out

depths of field. The background was cleared of modern day traffic visible from the site and substituted with a green forestry background, the sculptures retaining the silver glow of the stainless steel. Rain was added to convey the

soldiers in action.

Moving Out attempts to create the apprehension felt when having to move out on patrol in hostile territory in moonlight conditions, stated by military friends as a most terrifying experience when undertaken for the first time.

The group was photographed from the back, shuffled together slightly and then repositioned to give width. The background was de-saturated, the skyline painted deep blue to create the darkness and lighting effects applied to create the moonlight.

In an attempt to create a powerful image of the pathos of war, the three soldiers' heads in *Conflict* were created as individual layers, reduced in opacity to give the ghostlike images and pasted onto a highly coloured background scene (reproduced here in black and white) of seasonal burning desolation at Yosemite National Park.

Conflict

Note on technical stuff

The photographs were taken using a Yashica 320AF SLR. Lenses used included 18 mm, 28-85 mm and 70-210 mm with occasional flash incorporated. On very hot days when one tired of carrying the gear bag, a compact Olympus AF1 augmented the action. The film, Fuji 400, was processed on the High Street and digitised by a Canoscan. Currently the cameras used are a Canon 300D and Canon G2

Quick Tips and Tricks

From time to time we publish members' favourite shortcuts. Why not send us your favourite, perhaps with an example? Each of us is at a different stage in the world of digital imaging so basic tips are very welcome.

Here's a quick and easy way to restore a faded print, long past its sell-by date and having acquired that rather unpleasant red cast, and no negative to be found for a reprint.

Scan the print and use just three keystrokes from the Enhance menu in PhotoShop Elements: Auto Levels; Auto Contrast and Auto Colour Correction. See where this takes you and make further modifications if necessary. In PS you have the ability to fade the effect (Edit >Fade).

Flowers from a Finn

Gitta Lim LRPS was born in Finland and often returns to visit her family. Now living in Berkshire with her husband and dog, she's been interested in photography from her teens when she and her brother set up their first darkroom. She has studied film-based photography both in Finland and the UK. Gitta gained her LRPS after completing the City & Guilds' photography course at a local college, covering both colour and mono photography. In 1998 she discovered digital and was instantly hooked. She gave up both darkroom and film cameras. Ever since, she's used books and CDs to teach herself digital techniques. Working mainly in colour Gitta hopes to explore artistic black and white imaging but this time digitally. And a digital ARPS panel is planned. With some of her Photoshop tutorials published in photo magazines, Gitta offered DIGIT a sample of imaging work that she enjoys exploring.

You have taken a lovely shot of an orchid - but inside the house. This is how to use the Layer Style to set your flower on a trellis against a garden background. Here is the orchid, and the garden view.

Enlarge the view to about 6-700% and use the Pen Tool to create an accurate selection around your flower. Feather (keyboard shortcut Alt+Ctrl+D) the selection by 2 pixels and copy it to a new layer (Ctrl+J). Save the selection work path while the selection is still active – it will save hours of frustration if you need it again! Go to Paths in the Layer Palette; click the little icon at the bottom centre 'Make Workpath out of selection'. And when created double-click it to open the Save Path dialogue box. Give it an appropriate name and click OK.

Next create a new layer for the trellis and fill it (Shift+F5) with a suitable trellis colour – say brown or green.
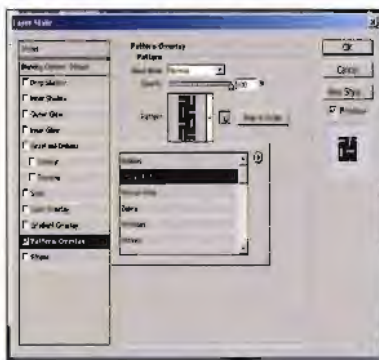

Now we need a Pattern Overlay. Layer> Layer Style> Pattern Overlay takes us there. From the drop-down menu at the side of the centre box pick the Woven Flat pattern. (If it is not shown you have to append it using the little arrow at top right-hand corner in Pattern drop down menu.) Enlarge the scale dramatically to say 1000% and decrease the pattern opacity to show through your trellis colour.

Now a crucial step: Merge the trellis layer and the style overlay so you can work on it. Right-click the Pattern Overlay in the Layers Palette and pick Create Layer. Then link the actual layer and style in the Layers palette and merge the linked layers. You now have dark sections in your trellis layer as shown.

Remove the dark rectangles so that when you pop in your garden background it will
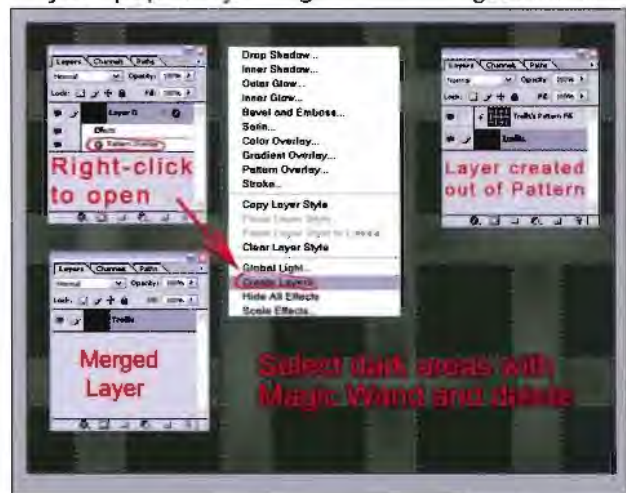
show through the holes. Use the Magic Wand Tool to select the first dark square and, holding down the Shift key, continue adding the rest to the selection. Press Delete to clear all the selected areas. Adjust the trellis colour if required.

You have now created your trellis. Use the Edit/Transform/Scale to make it a suitable size. Go to the Layer Style and add a convincing Bevel and Emboss effect on the

edges your trellis – change the highlight colour from white to a soft yellow. You could also add a faint wood effect on top of it in Pattern Overlay.

Now add your garden shot as a layer below the trellis and your cut out flower right at the top. You might drop a light shadow effect on your flower. Finally, a border will hide the bevelled ends of your trellis.

For further details post a message on the DIGIT forum and Gitta will be happy to answer any queries.

CREATIVE MONOCHROME

John Gray ARPS started playing around with photography as a teenager (a long time ago) and has always been fascinated with darkroom work. In about 1995 he bought his first computer and Adobe Photoshop 2.5. Although he thought it was wonderful, others in the camera club didn't agree. So, with the support of a few friends, he started what is now called The Herts Digital Arts Group. John Lawton and he now run the group, numbering around sixty. Here John takes us through his method for a mono creation.

Over the last three or four years I think I must have tried every means available in producing a decent digital monochrome print, Small Gamut, Quad Black, Piezography - you name it, I have tried it! The result - colour casts, metamarism and the rest. I arrived at the method I now use by trial and error, and with John Lawton's assistance, exhaustive testing. In my opinion this gives the best results I have ever achieved.

This procedure can only be fully applied with Adobe Photoshop CS. So, in Photoshop start with a colour image preferably 16 bit, and carry out your normal image quality adjustments i.e. Levels, Curves and so on for the starting point shown above.

Then select:
Image>Adjustments>Shadow/Highlight. Leave the settings as the default i.e. 50% Shadows and 0% Highlights and click OK.

In the Tools Palette, set the foreground and background colours to Black and White, then

Image>Adjustments>Gradient Map, when the dialog box appears click OK.

Go to Image>Adjustments>Levels and move the midtone slider to darken the image to your own taste. Click OK.

Sharpen the image using your own preferred method, and convert the image to greyscale.

(Image>Mode>Greyscale and click OK) to get to the monochrome image below.

To print set the print driver to the best possible quality i.e. 2880 dpi, BUT use black ink only.

Using an Epson 1290, and black ink gives a very neutral punchy black with no colour casts or metamarism. It could be argued that using black ink only doesn't give as smooth an image as using all of the colours. This is true, but the result looks very close to what I achieved in the Darkroom with Ilford FP4 and Multigrade. So I am very happy!

Give it a try and let me know what you think. To contact the group please email John at: *johngray@pixlpix.net*

The Wonder of Digital

Interest in photography for John Lawton ARPS started when he purchased a Praktica LTL in 1972. After that he found work and photography difficult to mix until 1981 when he joined a camera club. Turning his garage into a darkroom, he processed film of all types, printing from 5x4, 6x6, and 35 mm negatives, in colour, monochrome and slide film. When he retired in 1999 his interest in the darkroom waned and digital started. He says he spends almost every waking hour using Adobe Photoshop! John helps John Gray with The Herts Digital Arts Group.

In the beginning early digital workers were regarded as sorcerers and witches making pictures at the press of a button or so it was thought and creating images that were not possible in the darkroom.

The result of this in our camera club was dissention from the darkroom workers because they could not compete. There were shouts of: This is not photography. Digital was seen as an unfair advantage and could not be tolerated. Even the slide workers had a say, because as they would point out, only they did it properly as they had to compose the picture in the camera and live with the result.

The competition rules of the club were changed because of the perceived unfair advantage that digital workers had. What resulted from all of this dissention was an ill thought out solution where the print competition had an open section with three parts, Monochrome, Colour and Digitally Enhanced. There were no classes which we had previously had; primary, intermediate and advanced workers found themselves all thrown into the same pot. There were some unfortunate side effects from this. Previously when assessing the primary section judges would be kinder and some encouragement would be given along with the criticism. This disappeared with the new system leaving primary workers disheartened. We had two seasons of this before some sanity began to prevail and it became accepted that like any other part of photography it's an image: accept it as it is no matter how it has been arrived at.

It was during this time of dissention and upheaval that a Digital Arts Group was formed. The object was to promote digital methods by training members to use Adobe Photoshop. A lot of the camera club members joined this group in early 1999. Meeting on a monthly basis, new techniques were passed around. People wanted to share information unlike the darkroom period which by its very nature was solitary. Many hours were spent in the darkroom experimenting learning by trial and very often error. Once learnt the lessons were not necessarily passed on. There did seem to be some secrecy about darkroom techniques.

Nearly six years on from the start of the Digital Arts Group the results. are a blossoming of the print workers and a crossover of slide workers to print workers.

We have more creative quality work, by more members who are now being accepted by national and international exhibitions.

Digital has allowed the creative juices to flow, has removed all of the boundaries and left only the imagination as a restriction.
.
These days it is not just camera club members that make up the membership of the group but people who have bought a digital camera and want to get the best from it and are willing to spend the time and money to learn how to use it. Previously they took snaps, sent them away for processing and accepted what came back. Then they put them in a drawer and forgot them.

Digital seems to have changed everything: you cannot now buy a phone without a camera in it.

For me, that's the wonder of Digital: it is Photography!

Distinctly Digital

Dr Barry Senior FRPS is Chairman of the Distinctions Advisory Board and of course Chairman of the Digital imaging group. In this introductory article he sets out the RPS Distinctions framework and touches on where Digital Imaging fits. Future issues of DIGIT will carry more information.

The RPS Distinctions are designed to span all branches or disciplines of photographic imaging and related areas of research and application. The awards are based on the assessment of evidence of personal achievement. The evidence may be photographic images or it may be evidence of research or successful completion of a recognised course. The Society also awards Imaging Scientist Qualifications providing vocational qualifications for Scientists.

An application for a Distinction is made in one of the following disciplines:
Still Photography.
Slide Sound Sequences.
Film and Video
Research and Development
Imaging Science Qualifications and Science

This review concentrates on **Still Photography.**

Licentiateship (LRPS) requires a good basic competence in still photography, slide sound sequences or film and video.
Associateship (ARPS) requires a high standard of technical and visual competence and personalised proficiency in a specialised area or categories.
Fellowship (FRPS) is awarded for original work demonstrating outstanding and distinguished ability

In Still Photography the evidence is usually submitted as prints or transparencies and for 'L' and 'A' images on CD. Ten, fifteen, and twenty images are required respectively for 'L', 'A' and 'F'. Mixtures of transparencies and prints are not permitted. Evidence in book form is also acceptable at 'A' and 'F' but **all** images must be of the required standard.

The categories for 'A' and 'F' applications in **Still Photography** are:
Applied and Professional
Documentary and Visual Journalism
Nature
Travel
Contemporary
Visual Art
Printing (Not digital)

Digital prints are acceptable from transparencies or digital cameras in all categories. Faults to be avoided are over sharpening, burnt out highlights, noisy shadow areas, colour casts and over enlargement. For the Nature, Documentary and Travel categories manipulation which distorts the truth or integrity of the record is unacceptable.

The Assessment Process

Assessments are made by an expert Panel appointed by Council for each of the categories or disciplines. The Panels make recommendations to Council; Council then makes the final decision. The Fellowship recommendations are reviewed by the Fellowship Review Board, also appointed by Council, to ensure consistency of standards. The Panels are appointed with the Chairman every two years following the Council elections.

Applying for a Distinction

It is usual to progress through the levels of Distinction from Licentiate to Fellow. Applicants for a Fellowship must be Associates.

Before applying for a Distinction it is strongly recommended that applicants seek guidance on the standard of work required. There are a number of opportunities for this:

- It is normally possible to attend Licentiateship and Associateship Panel meetings as an observer.
- Advisory sessions, led by Panel members, are organised at various locations around the country. Successful work is shown and members can take work for comment and advice.
- In the Spring and Autumn successful 'F' applications are shown at Bath and occasionally in other locations.

Applicants are expected to make the final choice of work to be submitted as evidence but it can be discussed with anyone. However, it must be remembered that only current Panel members are likely to be completely familiar with the standard required. If work is submitted in an inappropriate category, it will be forwarded to the most appropriate Panel for assessment.

It is important that the evidence submitted is of a consistent standard. The inclusion of even one item of sub standard work, particularly at Fellowship level, may result in failure.

Unfortunately, some applicants will fail. Feedback is provided with the returned evidence to all unsuccessful applicants; and whenever possible the applicant is advised to make contact with a member of the Panel for 'one to one' advice and this can be arranged by the Distinctions Manager.

Information on Distinctions is available from Carol Agar, the RPS Distinctions Manager. Tel: 01225 325760; email: **carol@rps.org**

A new speaker on the circuit?

When I was at Photokina recently I saw some Photoshop demonstrations by someone I had never heard of previously. Guy Gowan was giving demonstration on the Adobe, Wacom and Gretag Macbeth stands throughout the whole period of the exhibition; I was fortunate enough to catch a couple of them.

Guy is very knowledgeable in Photoshop techniques and has a very good and easy to listen to delivery. Subsequent to one of his demonstrations I approached him for a chat and discovered that he is based in the UK and has been developing his talks and web site for quite a while now; he is a mine of information.

The reason for this little article is to spread the word about Guy, his web site and his availability to give talks. The web site, **www.etipsntricks.com**, normally has a subscription of £48 per year. However, for a limited time the cost of subscription is £36 to DIG members. DIGROs might like to make note of Guy's availability for talks and lectures. When making an approach this should be done through Alan Wheeler, **alan@etipsntricks.com**, who acts as Guy's booking agent. Prices vary on location but DIG organized events would attract some discount.

The Digital Imaging Group is always on the lookout for new talent to give talks and lectures. If anyone out there does discover someone worthy of note then please spread the word. Let your DIGRO know and any member of the DIG committee and we will endeavour to spread the word around.

Ray Grace LRPS
DIGROs Liaison

Editor's Choice

Sand Patterns   Vincent Lowe ARPS

Woodpecker   Reinhard Klein ARPS

From the DIGIT Folio

Bad weather racing   Mike Dooley LRPS

Getting to A: Sir Jerry Wiggin, TD describes his road to a distinction

Jerry was Conservative MP for Weston-super-Mare from 1969 to 1997, an astonishing 28 years before retiring voluntarily. He was a Minister in both Agriculture and Defence and a Select Committee Chairman for ten years. A joint founder of the House of Commons Photographic Group, he was Chairman for many years.

My wife started it. Riled by my occupation of a spare bedroom and my lengthy disappearance there as I wrestled to learn Photoshop, she challenged me to get a Distinction. She knows enough about the RPS to make it clear that nothing less than an Associateship would satisfy her. The first consideration in my mind was what images had I already got that could be put together as a panel. It is not too difficult to find fifteen nice pictures but making a panel is the real test and one which I found very difficult. It is meant to be.

So I had a go at a nature panel with a slide entry, then with prints, but without success. The RPS has made a major effort to see that photographic standards are maintained across all subjects but what constitutes a panel? The written guidance notes are a worthwhile attempt at putting on paper what is required, but words are not really adequate. Attending adjudication and guidance sessions does give one a good idea of what the judges are seeking.

That is not to say that I have agreed (silently of course) with all the decisions that are made, when I have been watching assessments. Gratuitously unkind comments about one's beloved pictures can be very hurtful. Of course these judgements are a matter of opinion but if I had a criticism of all the Panels I have attended, and I made a point of going along to several that I had not entered, I felt some members might look more for the half full bottle rather than the

half empty! Nevertheless after every rejection one of the Panel members volunteers to be available to help the entrant with advice and the chairman fills in a sheet of comments. The distinctions department are very helpful in putting one in touch with nearby Panel members and I have been very grateful to several who have given up their time to advise me on my pictures, their faults and merits and generally to assist in putting together a panel.

Fifteen may not sound a lot but it is surprising how often I found that I had ten or even twelve good pictures but it is no good trying to sneak in bad ones because they will be noticed. Slides and CD-ROM are the least trouble but I am sure that prints are well worth the considerable extra effort.

In time off from a business visit some years ago I had been to a National Park in Northern Australia called Kakadu with which I fell in love. Last year my wife wanted to visit relatives in New Zealand so we stopped off in Darwin en route. Although the season was not the same and the wildlife was harder to find we made two boat trips and I was able to take enough pictures to establish a base from which to select a panel. It is not a part of the world with stunning scenery or particularly photogenic subjects but the idea was to try and convey the solitude and wilderness of the area.

On my first visit in early November I had a Canon EOS1n. It went on strike for several minutes and I assume that it was the heat (over 40° C). Some time in the shade and happily it

Putting on the L plate: Carole Hallett's Maltese magic

In additional to photographic work, Carole is an accomplished artist, and an experienced scenery and stage designer. She explains to DIGIT her approach to photography and the preparation for the submission of her successful L panel.

If someone had told me 5 years ago that I would have letters after my name for photography I would have assumed that they had not seen any of my 'snaps'. My knowledge of using a camera was limited to an 'idiot proof' point and shoot which I used to record shots for paintings.

Then about 3 years ago whilst we were on holiday on Gozo (the sister island of Malta) my husband Steve who is a diver, was asked to help out at our local dive school. This 'helping out' actually meant a move to Gozo to set up home. There was also the small issue of maintaining an income to consider!

Reshaping my work patterns to enable me to earn an income and live in Gozo was quite a challenge and we agreed that I would commute every two to three weeks to continue my work as a personal development trainer.

Anyway back to photography. Whilst waiting for my flight on one of these regular commutes I treated myself to a 1.3MP digital camera. In between trips a friend in the photography business looked through some of the record shots and declared that they were actually 'good' photographically and that all I needed was a better camera. So with that advice ringing in my ears whilst waiting for another departure to Gozo I bought a 3MP camera and PaintShopPro. I was in great danger of turning into 'gadget woman' but I had no idea what the software actually did and more worryingly how the camera worked.

When next in the UK I was rescued by the same friend who waved a copy of a RPS magazine at me and said 'join them' so I did, along with Digit and that started me on the road to the 'L'.

Though I would not have expected to find myself quite so 'hooked' on a hobby, the opportunity to put images on the Digit website and get feedback was both scary and exciting. The feedback that Digit members gave me was really helpful and I even dared to comment on other people's images.

Having not read the PaintShop manual meant that I did not know what the 'rules' were, and I spent hours creating a 'look' for the Gozo images I had taken. The method I used when working on each photograph was to imagine that I was using PaintShop to 'paint' the picture and to take risks by removing backgrounds to leave a white space behind some subjects.

These images were 'tested' by being displayed on the Digit site, and from the feedback I worked out that what I was doing was OK. I realised that the time had come to get 'technical' and I finally read the manual (highlights only) so that I understood what I was doing and could repeat it. I even started to get an impressive vocabulary of photographic terminology with which to communicate in the pursuit of essential photographic gadgets.

For eighteen months Steve kept encouraging, nagging and imploring me to have a go at the 'L'. I decided to stop procrastinating and to put him out of his misery. Eventually, but not without a lot of anxiety the ten images were selected, printed, mounted and dispatched in time for the November 2004 panel and the rest as they say is history!

My 'gadget woman' collection now extends to a dye sublimation printer, a 5 MP digital SLR and a 8MP compact camera along with assorted software which does all sorts of 'whizzy' things and one day I promise Steve that I will read the manuals.

Writing this now whilst looking out at the Mediterranean, (which today is grey and stormy) the journey from those early days has felt at times challenging, at others frustrating and on many occasions totally thrilling. My thanks go to those Digit members who patiently answered all of my emailed questions and who never showed frustration at my need for idiot level explanations of what now seem fairly basic level technicalities. They know who they are and I am sure they will probably get a new set of questions when my nerves allow me to attempt the 'A'. Maybe they should take this as prior notice of more emails en route from that woman in Gozo!

Carole's images of Gozo are at *www.catswhiskersphotography.co.uk* and her LRPS panel layout and four selected prints are shown on page 14.

Pixels or optimum print width?

Based on his very well received lecture at December's RPS Imaging Science symposium, Dr Lionel Baker has written this special article for DIGIT. He explains how the number of pixels quoted by the manufacture could be replaced by a more useful measure. He offers some initial findings with a chance to test your camera. Lionel worked for many years at Sira Ltd and since retirement is an international consultant in imaging.

Digital cameras are widely available embodying advanced technology at an affordable price. New models with improved performance and facilities appear every few months. We expect to pay more for additional features such as an optical zoom or the ability to store more pictures but are the benefits from an increase in the number of pixels from say 2 to 4 million so obvious? We are often told picture resolution improves with the number of pixels, although this observation conflicts with our experience with a film camera, where resolution depends on grain size rather than the number of grains. The situation is further complicated by electronic signal processing prior to printing. Lens aberrations and the freedom we have in selecting print size are also relevant issues.

In the end it is the print which we judge, based on the eye's resolving ability – varying from person to person that matters. We can define an "optimum print width" (OPW), where the size of the 'effective' pixels in our camera matches the cones in our eye assuming the print is viewed at arm's length, say 500 mm. In practical terms this means adjusting the size of our print so that its resolution matches that of our eye. But we rarely, if ever, see reference to this matter. If our print is too large we shall see evidence of pixels or if it is too small we shall miss important detail. Let us assume we need prints of width W mm. Given that the eye can resolve 5 cycles or line pairs per mm and that we need 2 pixels to be able to detect a single line pair or cycle, it follows we shall need at least 10W pixels across the width of our print and also across the width of our image sensor.

Assuming an image format of 3/4 the total number of pixels required will be 10W x 10W x 3/4 = $75W^2$. Thus a print of width 150 mm would require a camera with 1.7 MP. This calculation, of course, assumes that every pixel carries spatial information. To check whether this is in fact the case with a particular camera we need to have means for measuring the OPW so that given this value, we can determine the number of 'effective' pixels across the print width and also the total number of effective pixels in the image. This number can be compared with that claimed by the manufacturer.

The determination of OPW requires measurement of the limiting resolution of our camera. We call this measure the spatial frequency bandwidth (SFB) when testing digital cameras because it should include aliasing. The most convenient test pattern for measuring SFB is the sector star as shown below. The sector star test pattern on the left provides the image of reduced resolution on the right.
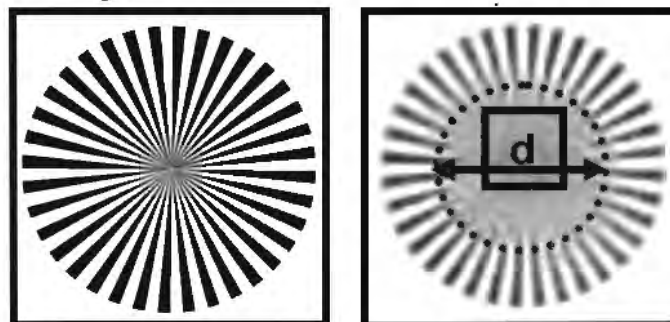
An image of this pattern at an appropriate distance will reveal an unresolved grey disk at the centre as shown in the right-hand image. Some cameras show distorted lines in the grey area due to aliasing. The pattern has 36 bars and spaces so the circumference of the grey disk of diameter d will be πd. The grey disk should be big enough to include all structure you would not wish to see in your image. The SFB will be $36/\pi d$ and the number of cycles across the complete image of width D will be $36D/\pi d$. Since this must equal the number of cycles on our print, namely 5(OPW), where the spatial frequency bandwidth of the eye is 5 cycles/mm, we have the relation

$$36D/\pi d = 5(OPW) \text{ or } OPW = 2.3D/d$$

It will be seen that the above simple equation is independent of the focal length of our camera, the zoom setting or the object distance. The ratio D/d can be obtained from an enlarged print but it is preferable to load the image into 'Photoshop' or equivalent software and use the length scales before and after enlarging the image so that the grey disk can be seen more easily. The diameter of the grey disk, when a person able to resolve 5 cycles/mm views the pattern at 500 mm, is 2.3 mm.

We have assumed the spatial frequency bandwidth of the eye is 5 cycles/mm at arm's length but the value for a particular person can be determined by judging d at a known distance and scaling the value to arm's length viewing. An individual with impaired vision will benefit from a larger OPW. We have seen that the number of effective pixels across an image width is 10(OPW) and the total number of effective pixels in our camera is $75(OPW)^2$.

And now some test results. The OPW values of five cameras were measured, using the sector star test pattern, in order to see how these values (OPW_m) compared with those calculated from information given in the handbook (OPW_h), where this value is $(MP/0.75)^{1/2}/10$ and the effective number of pixels, (MP eff) is $75(OPW_m)^2$ Table 1 also indicates the ratio $(OPW_m)/(OPW_h)$ expressed as a Pixel Packing Index quoted in percentage terms.

With the exception of the Sigma camera that employs a Foveon CMOS sensor, where all pixels contribute to spatial resolution, the total number of effective pixels was only about half of that claimed in the handbook. It is assumed that this is due to the fact that a similar number of pixels is needed to provide colour when using a conventional CCD image sensor.

Camera Model/Metric	MP	MP eff.	OPW_h	OPW_m	PPI%
Olympus Camedia	1.3	0.6	128	89	69
Sigma SD10	3.5	3.3	216	210	97
Nikon 4500	4	2	231	164	71
FinPix 6800Z	6	2.3	283	177	63
Nikon 8800	8	4.2	327	236	72

Attempts to use the published pixel numbers to predict OPW values may be significantly in error when using CCD sensors. This is the case for most digital cameras currently available. This metric should be measured using a sector star pattern and corrections made, if necessary, for impaired vision. Manufacturers and reviewers should consider using the OPW metric as a new camera image quality standard instead of just quoting nominal pixels that take no account of signal processing, lens aberrations or conditions of camera use. The OPW metric can be used to determine the optimum settings of the various camera controls and to study the effect of conditions of use such as flash or camera shake.

A camera-testing file with measurement instructions of OPW is available from Dr Baker at: *lionelbaker@ntlworld.com* who welcomes your results to add to his research.

Keep It Clean! Cleaning Your CCD or CMOS Image Sensor

Graham Whistler FRPS has been using digital capture exclusively for several years now. He shares his experiences in the vital area of ensuring that the image sensor is not degraded or damaged by dirt or dust.

A serious problem for many digital SLR users is keeping the image sensor free from dust. Inevitably dirt and dust ill find a way into your camera and some of this ill land on the surface of the image sensor. The 1age sensor itself is protected by the fitted low-ass filter, used to prevent moiré. As this filter is ot in the focal plane dust falling on it will show up images as out of focus grey blobs. To test for rt on your image sensor select a suitable subject like a clear blue sky, fit a wide angle lens and take a picture at f11 or f16. Any dirt will show up clearly: even a new camera may have dirt present from the factory. Cameras are assembled in clean rooms but the fitting and removing of lenses to the body can release small particles. Zooming of some lenses sucks in dust (a long focal length lens acts like a suction pump so zoom slowly!) and the mirror action stirs it all up.

Every time you change lenses you are in danger of letting in more dust. Take care and protect your camera body at all times with a body cap if there is no lens present. Your image sensor has an electrostatic charge when the camera is turned on so this will attract dust. Turn off your camera power when changing lenses. Keep the camera body pointing down and have the new lens ready to put in place at once. Never change lenses in a dusty or windy place. On the other hand do not get too up tight about this: enjoy your digital photography!

Some photographers I have spoken to seem (so far) to have little problem with dust. Camera users with CMOS image sensors report less problems than users with CCD equipped cameras. Some photographers may just not notice the problem. If you take landscapes dust will show up far less in pictures with plenty of fine detail like trees and grass but in areas of blue sky dust spots will show up. As an advertising photographer I do a lot of product photography against coloured plain background papers: any dust shows up at once on photographs.

The odd spot can quickly be removed from pictures with Photoshop using Clone Stamp or Healing Brush tools. If you have only a few spots you soon know their position and removal is easy. If like me you have lots of pictures against plain backgrounds the problem is far more serious and can add hours to a working week.

Sooner or later you will have to deal with the problem. Nikon and Canon both state if you have dust on your image sensor do not attempt to clean it yourself as you could do serious damage to your camera. I phoned Nikon to ask about their UK policy. They will clean your CCD if you send the camera to them and will charge a modest amount to do this (or perhaps nothing if you bring the camera in to them). They do NOT want you to have a go yourself and clearly state: THIS IS AT YOUR OWN RISK! Please read no further if this bothers you.

CLEANING YOU IMAGE SENSOR. First read your camera instruction manual, some companies like Fuji do let you clean your CCD. Most cameras have an image cleaning menu: "Mirror Lock-up for CCD Cleaning". With Nikon you must use the AC power adapter sold separately. Do not use normal B setting to hold the shutter open as your finger could slip and close the shutter, battery may run out etc. Also opening shutter this way means the CCD will be charged and may attract more dirt to the surface. Cleaning should be in a dust free room, perhaps on a rainy day? Lock up mirror, view the surface of the filter with a good light. If dust is very small you may not be able to see it.

Method 1 Using Air Blower: Turn camera front down and use several blasts of air from rubber air blower. Take care not to touch delicate surface of the filter. Do not use blower-brush as bristles could cause damage. Do not use compressed air cans as they can form harmful deposits of moisture on the filter. After several good blasts from the blower close shutter and take a test picture. If some dust remains repeat process. (If this does not work Nikon advise returning camera to them for cleaning.)

Method 2 Using Sensor Swabs and Eclipse Optical Cleaning Fluid: Use only clean-room manufactured and sealed swabs. Lock mirror up, place camera under good light, remove swab from protective wrap, place small amount of fluid on each side of swab. Place swab at left top edge of sensor and wipe slowly across. Turn swab over and place on bottom right, wipe back to left and discard swab. Some swabs are large enough to cover full width of sensor. Each side of swab must be used once only as if it picks up any dust or grit this could scratch surface of the sensor. Take test picture. If dust remains, repeat method. You may need to do this several times. (Avoid the temptation of a strong gin for yourself!) I have used this method for some time: it works very well for me but it is not for the faint-hearted and is very much at your own risk. Swabs (several sizes) and fluid are available from:
Crown Photo Systems, East Portway, Andover, Hants SP10 3LU 01264-335334
www.crown-digital.co.uk (Good Flash movie on USA site showing use of swabs.) Good luck!

KEY CONTACTS
DIGITAL IMAGING GROUP

Chair: Dr Barry Senior FRPS
01425 471489
Barry@littlepics.freeserve.co.uk

Secretary: Glenys Taylor ARPS
01823 282516 or 01823 323986
glenys.taylor@tiscali.co.uk

Vice-Chair and DIGROs:
Ray Grace LRPS
01249 716165
ray.grace@lineone.net

Treasurer: Peter Roberts ARPS
01926 420105
peter-roberts@ntlworld.com

Webmaster: Bill Henley LRPS
01453 825068
henley@onetel.com

Publicity and Website Updates:
John Long ARPS
0117 967 2231
johnlong@lineone.net

Exhibitions: Alex Dufty LRPS
01454 778485
alexpatdufty@hotmail.com

Co-opted - Events: Hilary Roberts
01926 420105
hilary-roberts@ntlworld.com

Graham Whistler FRPS
01243 266053
graham@gwpmultimedia.com

Clive Haynes FRPS
01905 356405
Clive@crhfoto.co.uk

Maureen Albright ARPS
01672 540754
maureen@maureenalbright.com

DIGIT: Jim Buckley LRPS
01932 843893
jimbuckley.baltic@btinternet.com

DIGITAL REGIONAL OFFICERS
Members wishing to attend regional digital imaging meetings should contact the organisers listed below for full details

Joy Hancock FRPS
joyandmike@woodview24.freeserve.co.uk

Cumbria
Harry Bosworth
harrybos@aol.com

Central
Clive Haynes FRPS
CRHFoto@aol.com

Central Southern
Dr John Nathan LRPS
j.nathan@ntlworld.com

Wessex
Maureen Albright ARPS
maureen@maureenalbright.com

Scotland
Alistair Knox LRPS
akphoto@btinternet.com

East Midlands
Bob Rowe ARPS
bob.rowe@btinternet.com

Western
Glenys Taylor ARPS
glenys.taylor@tiscali.co.uk

Southern
Barry Senior ARPS
barry@littlepics.freeserve.co.uk

South Wales
Mel Stallworthy LRPS
melstallworthy@onetel.com

What do you want from DIGIT?

Special interest groups in the RPS offer a range of benefits specific to that membership. In our case one major offering, alongside the annual exhibition and Spectacular and the well-frequented website, is this quarterly publication – **DIGIT**.

So, we want to ensure we're giving you what you want – and getting your contributions. Your committee would like you to let us know by post or email, perhaps after considering the following issues. Bear in mind that the magazine is put together by unpaid volunteers who are not experts in publishing, we rely on members writing pieces for DIGIT and that costs are limited by the income from the modest extra subscription which you pay through your Society subs.

Some things which we've asked ourselves include:

- Do you want a magazine at all? Would the website alone be sufficient?
- How frequently do you want your magazine?
- What's the right balance between showing members' images and articles?
- The group covers all levels of experience. How far are we getting the balance of articles right for you?
- What sort of articles do you want to see? Technical, creative, tips and tricks, training courses, reviews?
- What articles and pictures are we including that you don't want?

- How can we improve the magazine?
- Generous suppliers insert flyers and handle the distribution so offering relevant information and reducing our costs. Would you like to see more or less of this? And are there particular suppliers you'd like to see encouraged to do this?
- Finally, when will you send us an article for inclusion? Remember that everyone is learning and all experience is valuable.

We look forward to hearing from you, by post to 1 Aldenholme, Weybridge, Surrey KT13 0JF or email to *jimbuckley.baltic@btinternet.com*.

Thank you.
Jim Buckley, Editor