Digital **doings**

Using his personalised Christmas card as an example, Gordon Laing shows you how to digitally recreate a stained glass effect. And, the ins and outs of using digital cameras.

I urge all readers of this column to check out our digital camera group test on page 176 — the first undertaken by *Personal Computer World*. My colleague, Adele Dyer, and I decided it was best to visit a well-stocked distributor for the day and try them all out under the same controlled conditions. So we popped down to Guildford to visit the Digital Camera Company, which was packed with more models than we'd ever seen gathered together in one place.

In this month's column I'll cover the subject of using digital cameras, but first a few extra details on how last month's Christmas card image came into being.

Return to the stained glass
Last year I shocked many readers of this column, who turned the page to see a festive photo of myself peering back at them — scary stuff. I printed out a batch of them as Christmas cards, and rather than getting lynched, as I'd first expected, most people asked what I would do next year. That's setting a precedent for you!

Those lucky enough to have a copy of last month's *PCW*, will already have sampled the full force of "Laing's Christmas image" but, unfortunately, I ran out of space in which to fully describe how it was achieved. So indulge me for a while and I'll divulge the gory details to you.

I have always had a fascination with stained glass windows, and fancied making one of my own — digitally, of course. So I hung out around numerous religious establishments and I browsed art books for research. I must admit to also having looked carefully at Christmas cards already on sale, to gain inspiration. Two definite styles emerged: the oldest stained glass windows

had wavy strips of lead and quite intricate detail, while the more modern designs were clean, almost Conran-esque.

In all cases, faces and areas of detail too complex to create with whole strips of lead, were hand painted, inscribed or drawn directly onto a clear pane of glass. I kept this in mind for the time when I would finally add my face to the rest of the composition.

Look closely at lead on stained glass windows and you'll see that it's nowhere near solid black. There are various textures and shades of grey running along the lines. This posed a problem which was resolved by an issue of style. I didn't want anything too fussy, so I decided on solid black lines for my lead. This would be an ideal application for a vector drawing package, especially when it came to filling in the gaps with stained glass-like colours.

However, I'm not great with vector drawing apps and, in the absence of a graphics tablet, I decided to draw the basic outlines by hand. Once pencilled out and correct, I went over the lines with a jet black, thick marker pen. Looking closely at existing windows, I noticed the weld marks filling in the areas where one strip of lead crossed or joined another. I ended up placing blobs of inks in the corners of every join on my page to simulate this effect.

Of course my so-called jet black lines were actually as uneven in shade as genuine lead. I quickly rectified this by scanning the page in black and white line art mode. In this mode, a threshold level is set, whereupon anything too light is blanked out as white, and anything darker becomes pure black. Perfect.

At this point I had to make an important decision which I'd neglected last year: how big did I want the picture to be and, equally

important, what shape? Last year I chose dimensions, off the top of my head, forgetting to take into account the size of the envelope. And guess what? Correct; I had to buy envelopes which were way too big, so my precious work rattled around inside and got severely mangled.

No mistakes like that this year. So, as a hot tip for anyone considering this kind of thing: make sure you know envelope and printer sizes before you begin! Consider where you're outputting. I started working in CMYK colour space immediately, thereby avoiding any nasty surprises when converting from, say, RGB colour space.

Once that had been worked out and scanned in, I had the job of filling the gaps with colour. I considered solid or graduated fills but decided it would look too child-like and simple. Instead, I reached for the superb Autodesk Texture Universe CD and pulled off several scans of real stained glass windows. A little fiddling with colour balance and I had six or seven pieces of coloured, textured "glass" with which to play around.

The next part was simple; I just copied the glass scans to the clipboard, selected the areas to fill and pasted them in (from the edit menu). I dragged it around to where I wanted it, and Bob's your uncle… (actually, he is my Uncle, so here's a big hello to My Uncle Robert!).

But now I had the potentially tricky task of putting my face onto the head and shoulders I'd drawn. I dug around my photo collection for a full face picture of myself (I had considered taking a digital camera original, but found a suitable print instead). One quick and dirty scan later I had to reduce it to a scribbly level of detail. Fortunately, I'm pale anyway, but I upped the brightness and contrast until I was left

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with an outline, with faint marks for my eyes, nose and mouth. A couple of Photoshop filters later — particularly the Photocopy filter from Adobe Gallery Effects (now included with Photoshop 4) — and I had the desired effect. A copy, resize and paste later and my masterpiece was finished — for this year anyway!

Digital cameras
In this month's group test we've looked at digital cameras for the first time, and discovered there's more than meets the eye when taking electronic photographs. They are all very different — as different as the multitude of compact and SLR film cameras on the market. Being perfect electronic gadgets, digital cameras are just asking to be abused: imagine over-zealous designers popping mysterious buttons with unidentifiable icons.

During our test, I and my colleague, Adele, took pictures of the same composition from approximately the same distance and angle with every digital camera we could lay our hands on. While many produce images designed for on-screen use only, printing the sample output from each would at least indicate the relative quality of each model.

In theory this is great and, in practice, as you'll see elsewhere in this issue, it worked out reasonably well, but one of the most infuriating things, on certain cameras, was being unable to perfectly compose the images. The trouble is that all the budget digital cameras to date are not SLR designs; instead relying on one lens for the viewfinder and another for the image-taking. Anyone who's ever used such a design on

a compact film camera will know the pitfalls of accurate framing, particularly when photographing close up. So parallax error is our perfectly good excuse for not getting the same angle and framing in every shot.

An SLR optical design is, of course, one way to solve the problem, and while many higher-end digital cameras employ this trick, they are, for now, only for the very wealthy. Digital cameras, with their electronic images, offer the LCD screen alternative for budget models.

Casio started the trend with its budget QV-10a digital camera, which was not only cheap but also dispensed with the viewfinder altogether in favour of a small, colour, LCD screen at the rear. Many people criticised the power drainage as well as the undeniable fact that the screen was difficult to see in direct sunlight. But what it did allow, was a precise view of what you were going to get. Even better, LCD screens can be used to view images in memory to verify that you have indeed captured exactly what you were after — a kind of electronic Polaroid.

LCD screens are becoming more commonplace, but I would like to see budget cameras with both a screen and conventional optical viewfinder, for those occasions either when the sun is out, or the batteries are about to die.

Utility is also an issue when it comes to transferring images from camera to PC. Most models offer some kind of lead (usually serial) as a physical connection. Admittedly, you don't have to wait long, but in many cases it's like visiting a particularly slow and image-intensive web site. Far better, in my opinion, are those cameras

In this month's digital camera group test, we photographed the same composition with each model set to its highest quality, and printed the results alongside each other. Although it's unfair to compare the output from products costing ten times as much as its neighbour, or compare those geared up to go into print against those designed for electronic publishing only, it does indicate the relative quality of each camera. Here I've enlarged a portion of the image to really bring out the differences of three different cameras: the lowest resolution Casio QV-10a (top), the mid-performing Agfa (middle), and the high-end Minolta (bottom), which is the only model of the three designed to go into the demanding world of high-resolution printing

which offer card-based storage, usually conforming to the PC Card standard (although sometimes requiring an adaptor). In these cases, you can simply whip out the card and slot it straight into your PC for almost instant access; but of course the average desktop PC owner will again curse the fact that PC Card slots never caught on, outside of portables.

A final word on the subject, for now, regarding software. Like the myriad of hardware controls, the software situation is no different in terms of standards. While some cameras use industry-standard TWAIN drivers, others feature a proprietary solution. There's nothing wrong with this, unless you're a reviewer faced with a thousand varieties.

Fortunately, this writer possessed NBA's PhotoWallet package from The Digital Camera Company. Seemingly designed for poor souls like myself, or companies owning more than one type of digital camera, PhotoWallet will talk to, and extract images from, virtually any digital camera — suffice it to say that updates become available as new cameras appear on the market.