

## **Digital images for large technology conservation**

### **Sarah Clayton and Alison Wain - Question and answer session**

**Alison Wain:** Can I just ask how many people here do store their conservation images on CDs?

[Many hands went up.]

Long term?

[A few hands came down.]

Earlier this year we were really talking to our Multimedia department and just realised some of the pitfalls that we were very rapidly falling into and thought it would be useful to have this talk to try and make other people a bit more aware of the problems that you can have.

**David Thurrowgood:** We use digital photography, as many people do, extensively in our treatment records. It's a very handy, quick method of recording information, and we tend to divide our image recording up into several levels. One is JPEG – quick, dirty, nasty shots which can be used in the short term for printing out an image or annotating records which are then used for reassembling something. Now whether those records need to be kept into the future – often they don't. Then we go to the next level where we'd record high quality, what will hopefully be archival records, which are backed up and go through that full rigmarole. But I would also put in a word of warning to people – we've had a couple of nasty experiences where, despite the best intentions, even with an IT system managing backup tapes, large amounts of information have been lost. So we also make sure that we have in the lab a good old-fashioned SLR camera – we in fact have two, one of them with a good old-fashioned archival quality black and white film and one with slide film which, again, [with] the right types may have a lifetime of up to 100 years if we're lucky. So we do tend, at crucial stages in a treatment, to actually just run off one or two shots of an object in that state, and there have been two instances specifically that I can think of where ultimately it's been those one or two shots which were run off on a slide film or a black and white film which have saved our bacon. So it's often very good to be just having that going on in the background.

**Sarah Clayton:** That sounds like really good advice.

**Alison Wain:** I agree. And also, even though professional colour film formats are being phased out now, the domestic colour formats – the word is that they will probably continue for quite a long time because of course domestic users don't necessarily change their cameras that quickly. And while they might fade and discolour a bit, even fifty years down the track you can often retrieve most of the information from them. And I've never been a fan of black and white information because I think you've thrown out the baby with the bath water, particularly if you're looking at the colour systems on aircraft or something. Even if you can't take the colours from a picture that's altered, you can see whether something's red or blue.

**David Thurrowgood:** A reasoning for black and white – continuing that old system, is that in theory some of these formats can last for quite a few hundred years, or so I've been told by paper conservators. So at least then if everything else is lost along

the way there could in theory be some information left. The big difference is that it takes the human eye to look at a piece of paper with an image on it, whereas these other [digital] formats are always going to require a machine in the middle. And whether or not that information remains available is the same as we all probably would know – there are many other recordings on various formats to do with music and television and film which are now essentially unreadable. Providing you have that trace information which is left there, hopefully it generally requires the human eye and a piece of paper to be transmitted; then there may be a safety factor.

**Sarah Clayton:** Absolutely.

**Andrew Pearce:** I've been working with Sarah and Alison a fair bit over the last few years, talking about this sort of issue. I don't know how you put it. Who here remembers Pong first being released as a computer game? Who here remembers when data cassettes were the only way that you stored information on a computer? Or even scarier, who here remembers when punch cards were the only way you stored information on a computer? And then we had 5 ¼ inch disks. And then we had Amstrad 3 inch disks. And then we had 3 ½ inch disks. OK we can still use 3 ½ inch disks, but... Media just keeps on changing and unfortunately that scary little thing that IT geeks keep saying about Moore's Law and storage space and formats and things changing all the time is going to come around and bite us. We've got stacks of stuff that is sitting on CD-ROMs and sooner or later it's not going to be readable. It's something that ... you can't rely on the fact that you're going to be able to read it and it really does scare me the amount of information that we do have sitting there that is going to be just as useless as if it was on a data cassette.

**Alison Wain:** The flip side is that I think the digital technology does allow us tremendous opportunities, and part of that is in profile raising, because you can zip these pictures around the world so easily, and you can zip them into the office of your manager and you can annotate them and you can make them look really wizzy and it does convince people in a way that it's harder to do with flipping through a few [hardcopy] photographs. So having said that, they're also really good instrument for getting money and profile for these things, so I wouldn't ignore it, but certainly for archival purposes if you can't backup regularly and use a long term archival format – well as long term as we have available - then I'd say yes, take your essential images on film.

**Nick Langford:** One of the advantages of black and white is, particularly in a machine shop operation – when you're photographing bits of steel which you've just machined and you're trying to show machine surface versus the other, it shows up a lot better using black and white photography than it does colour photography.

**Sarah Clayton:** I think you'll find with a lot of digital photography, especially the white on white – it's much more difficult to get a good digital photograph than it is with traditional film photography. They still haven't quite got the technology capable of doing it.

**Col Ogilvie:** Dinosaurs are a problem in this game. You see, when the Pup hands me a camera he's got to load it, cock it and all I gotta do is pull the trigger. Because if he asks me to set it up, I've got to put my glasses on. And half the time I can't bloody see

it anyway. So the thing is – I nearly had a disaster in the sense that I took – I don't know Pup – how many? 30 shots? With a JPEG, of an assembly set up, and when we went to view them to do an assembly – I had lots of blurs and no photos. So it was “Thank God I haven't got Alzheimer's yet”. So it was a memory case not a photo case.

**Sarah Clayton:** That is the thing with digital – you can go back and look at those images before you move on – you don't actually have to get them developed.

**Col Ogilvie:** They looked fine to me!

**John Griswold:** Because of a lot of the problems that you've been describing, about data migration and viewing images on different monitors, different equipment - I know that AIC [American Institute for Conservation], our focus has been looking very closely at exactly what are we allowed for treatment documentation – the ultimate documentation of before, during and after treatment shots. Can we commit to the digital formula? And we've been using JPEG images and TIFF and also the new format RAW which is another open format, for all the supplemental shots and surveys and reference and reminder images, but we still are printing out a hardcopy as part of our protocol for finishing out any kind of project involving treatment. And it was through the AIC's recommendation that Dan Kushel and the special committee on documentation – they basically gave us a green light – a shopping list to get “this” printer, using “this” archival quality paper and “these” pigment based inks, and we think this is going to be minimally good enough for what we collectively are obligated to give to future generations. So we take that very seriously, and we're in private practice so we have lots of incentives to cut corners and do the minimum and all my clients would be happy with just a nice little pdf file showing up in email with some slick images and captions and they're done. But we have the obligation as professionals to have that bottom line, low-tech thing that's going to work in the middle of power failures, and who knows what the future may hold.

**Sarah Clayton:** There are lots of less expensive ways of going about saving your images for the long term. You don't necessarily have to save them digitally, as long as you have a high-quality image kept, whether it be printed or digital.

**John Griswold:** The important thing to stress is that there is the technology now to create low-cost hardcopies that are going to last a hundred years.

**Alison Wain:** So you can use your digital copy for all the snazzy stuff and your printed copy sits there being an archival resource in the file.

**John Griswold:** Yes.

**Andrew Schroeder:** Something that I've found digital images are very useful for during a treatment or in the process of researching a project is that you can manipulate them on screen to show up things that you couldn't have otherwise seen. When I was at uni one of my first projects was a con rod and it was covered in scale and rust and oil residue, and the embossed numbers and symbols on it were completely illegible. But by taking a digital photograph with slanting light – whilst the initial image was still illegible, by manipulating the contrast and hue and saturation and so on so that

the image becomes drastically wrong in a sense, you can actually read information that you wouldn't have otherwise been able to see.