

## SPECIAL REPORT

## Cinematic 3D

## Is the future analogue?

ALEXANDER LENTJES BELIEVES THAT THE RIGHT FORMAT FOR 3D PRESENTATION IS WITH US ALREADY.

3D or stereoscopic film, is a peculiar art form. Stereoscropy, the art of displaying images the way we see them with our two eyes – and combining brain – has been around since the Renaissance. The moment these visionary painters understood space and the ways eyes see space better, they were experimenting with drawings in stereo. And 3D photography has been around as long as regular photography has, yet it has always stood in the shadow of its natural brother. The necessity of an external viewer has always been an inhibition to a visual art form that should have overtaken regular photography as the going standard. It never did because the obstacle of the viewing device proved to be too great.

IMAX has provided for a guaranteed way to keep 3D movies playing for a long period of time, creating more money and more word-of-mouth advertising for these films and their directors. By creating the process of DMR, films shot in 35mm and HD can be blown up to IMAX size. So this means that a producer looking to generate more money from his film will happily go IMAX and ideally go 3D.

The upcoming conversion of *Star Wars* to 3D will most likely go the IMAX 3D route, with a detour in the few 3D enabled DLP cinemas in America. Strangely, the existing and perfectly working 3D systems of the 1983 craze are not even considered for these releases. If it is the 3D that counts, Lucas

being able to charge more for the same product but with the added third dimension. This statement can be backed up by the observation that there are no real plans to develop a new visual language once the 3D revolution happens – nobody is being educated or trained in 3D filming, there is no literature on 3D cinematography other than technical manuals and even those are mostly unread by the handful of present day 3D filmmakers. Recent examples of this failure to do research on the technicalities of 3D are Robert Rodriguez' films *Spy Kids 3D* and *The Adventures of Shark Boy & Lava Girl in 3D*.

The wish to display all colours whilst still using anaglyphic glasses is an obvious mistake because reds and blues should not be visible through both lenses. It is very basic knowledge but simply ignored, consciously or unconsciously.

There are simple ways to show colours through anaglyphic glasses whilst not destroying the 3D encoding – not just by omitting reds and blues but by simulating them in the end result as seen through the glasses – but these technologies are sadly ignored and the visually painful experience is used as ammunition for the argument of 3D DLP projection even though these are two separate issues. And strangely, Rodriguez is in the DLP promoting club, while releasing his 3D films using anaglyphics.

Another well known example of this kind of failure is the release of James Cameron's *Ghosts of the Abyss* and *Aliens of the Deep*. By employing a converging HD camera setup underwater, the dirt floating around in the sea close to the camera lenses has too large a screen parallax. This means that the eyes cannot look inward that much to be able to see these particles without seeing them double. This causes a headache with the audience and Cameron should have known better shooting in these conditions.

A non- or less converging setup should have been used to spare the audience discomfort but again well-known 3D knowledge was ignored during filming. It may well have been shot using HD cameras, blown up to IMAX format using DMR and presented using LCD shutterglasses, but isn't it the content that should be looked at, not the technological circus used to present it? We are, after all, talking about telling stories in three dimensions.

How is the consumer expected to value the stereoscopic image of the near future when it will be a clumsy, uneducated and unimaginative audio-visual visual product? Let alone a product that causes headaches with its audience! Hopefully the added wow-factor will help things along a bit, long enough for a new generation of stereoscopic filmmakers to learn the trade and eventually really exploit the marvellous new possibilities of this closely related, yet very different, cinematic art form. (continued page 50)



The Adventures of Sharkboy and Lavagirl in 3-D was another anaglyphic 3D release from director Robert Rodriguez.

& co should be suggesting these much cheaper and readily available systems to theatres and distributors and not use the films as an excuse to make cinemas purchase or rent 3D DLP projectors. Or release anaglyphically.

The frantic search for a technical breakthrough in 3D display, which has been going on for more than 100 years now, is fuelled by the promise of an evolutionary step in visual entertainment.

But most of the current audio-visual industry perceives 3D as a means to re-sell old product in a new shell and moreover,

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Having a digital and even a glassless way of presenting 3D will never take away the need for decent 3D content. Having established this, one can start to think about what is more important: getting 3D films out there to stimulate a



George Lucas said he's eager to release all six films in the Star Wars saga in digital 3D, one film a year, starting in 2007.

worldwide audience and breed new 3D cineastes or restricting 3D releases to IMAX and DLP owning theatres, giving only the lucky few in developed countries and living close to such a theatre a chance to see 3D films?

We need to think in terms of no additional investment for cinemas. And anaglyphic

presentation can do just that. Cinemas in India and China and even Europe and the Americas that are already scraping the barrel are not going to install expensive 3D-enabled DLP projectors, purchase solid polarising glasses and hire DLP technicians for just two or three 3D releases a year. It just doesn't make sense financially. With anaglyphs you're done and dusted by just distributing cardboard red/blue glasses and compromising a bit on colour representation, and not even that much if done properly. Remember: true popularity of 3D has come and gone within a year in 1923, 1953 and 1983 so far. Why? Because of the problems with projection technology in combination with a lack of decent 3D films. And the last two of those years used polarised projection, just like the DLP lobby is now suggesting, not anaglyphs! 

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## AVOIDING A FREAK SHOW

*Stereoscopies are a kind of art form separate from cinema. In two ways it is closer to theatre than cinema: because of its life-like representation of the world and because of its preference for first-person camera work, creating a sense of being there at the performance.*

*However, in its subject matter it is often closer to a sort of modern variety show, a nickelodeon or a theatre of freaks. It looks at itself and says: "Gee, being dimensional is really neat! Look what I can do!" After which it will jump through hoops to entertain the audience in the most basic of ways.*

*However, there are also arguments against stereoscopic cinema attempting to tell a fictional narrative story like regular cinema does. First and foremost, the dimensionality easily distracts the viewer from the story and its characters.*

*This way, the viewer is removed from the experience of enjoying the story and has to switch brain sides to enjoy the technicality of the three-dimensional spectacle. This is something special-effects-driven movies without a good plot have in common with stereoscopic cinema, and its audience may be wooed in the first few seconds, but will be unimpressed by the whole thing at the end of the movie. Secondly, when watching a 3D movie that does not perform the usual bag of out-of-the-screen tricks, its audience will question the need to shoot the film in 3D in the first place.*

*But then is colour always used in a functional way in film and should most films be shot in black & white and silently if they don't exploit colour and sound? 3D film is an art form that can work seriously and in its own right, narrative and non-narrative. As long as filmmakers will find a way to tell a good story that works in three dimensions, 3D film has a golden future ahead of it. And chuck an object or two at the camera every once in a while.*

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We have to get it right, we have to be devoted to perfecting the technical issues. Audiences pay for, and deserve, no less.

1853 saw the use of coloured filters to look at red and blue lines on a black background, a technique that is still with us today in the form of anaglyphs. While it can be very effective on black and white images, the saturation of colour images must be reduced when combined to form an anaglyph, so the reality of a colour image depends largely on the original content.

Anaglyphic cinema has been cited as one of the major reasons for 3D films falling out of public favour. On two occasions I've been dragged out of a cinema because friends were suffering eye fatigue and couldn't bear to sit through the rest of an anaglyphic film. It is my opinion that this technique should not be used for cinema.


Comprehending the complex relationships between image content, camera spacing, screen size, viewer seating position, and how the variation of the distance between people's left and right eyes alters the perception of depth for each person in an audience, is something that only research and practical experimentation can provide. Since it is my intention to specialise in this particular field, I'm embarking on a self funded stereo time-lapse shoot of Australian landscapes. I have built two stereo camera rigs using digital still cameras.

The first uses two of Nikon's D2X 12.6 mega-pixel professional units, and is easily capable of resolution suitable for IMAX projection. The second, using two Sony DSC-V3 cameras, is built to be lightweight and compact. Both rigs require purpose-built micro-controllers to ensure that the left and right images are exposed simultaneously, and to release the shutters at regular intervals required for time-lapse. In addition, I'll be using a motion controlled pan-tilt head, and an 8ft camera boom with basic motion control.

Along with the knowledge I gain about technique, I will be uploading the footage to a web site for your review and comment. Images and instructions for free-viewing will be provided. For the larger higher quality images and clips, I'll be distributing the required mirror viewer via the web site.

Ultimately I will release a stereoscopic nature documentary on DVD, which will be viewable on conventional televisions with one of the mirror devices, or by using active LCD glasses.

Commencing with the AEAF in December, I will also be offering lectures and presentations on the subject.

A calculated and coordinated effort by our industry will be the most efficient way to bring VFX into the Stereo-3D age. 

Tim Baier is an Australian VFX professional who has worked on films such as *Lord of the Rings: Fellowship of the Ring*, *Matrix Reloaded*, *Sky Captain & the World of Tomorrow*, *Return of the King*, *Fantastic Four* and as *Rising Sun Pictures'* VFX Supervisor on *Batman Begins*.