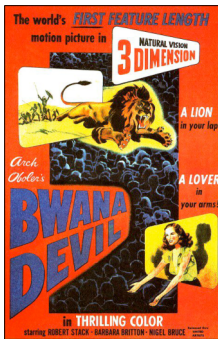




The World Goes 3D *an industry op-ed by Steve Wright*

One of the most startling trends I observed at the April NAB in Las Vegas is how rapidly the whole world has gone 3D. Everywhere you looked - editing systems, compositing programs, color timing systems, display systems - the 3D production workflow was being supported. There are now “3D ready” television sets being offered to the consumer by Samsung and even a 3D video camera from Panasonic is in the offing.



Before we go any further, let's pause for a terminology clarification. Strictly speaking, what most people are calling “3D” is actually stereoscopic (two views, a left and right eye). “Bwana Devil” (1952) was the first stereoscopic movie, and was obviously way before 3D was even invented. “Toy Story” (1995) was one of the earliest 3D movies, meaning it was made with 3D animation. The problem is that the term “3D” is often used to describe stereo movies. Within industry professionals you will find the term “stereoscopic” used, but when talking to your Mom you should probably use the term “3D”. Bear with me as I flit between these two terms in this article depending on context because when in production or post-production they use “stereo” but at the display end of the pipeline (home TV, theatres) they use “3D”. Can't we just all get along?

The movie industry's first foray into stereoscopic movies was a brief 50's fad in an attempt to freshen up the movie-going experience. The experiment was short lived because of the many production and projection problems with 35mm film, the poor quality of the anaglyph process (blue and red glasses), plus audience eye strain and migraines. The movie industry sighed and walked away from the experiment after only a few years. In the 1980's and 1990's IMAX staged a modest comeback for 3D movies, but the real comeback didn't start until the early 2000's culminating in the staggering success of James Cameron's Avatar (\$2.7 Billion world-wide so far!).

So why are 3D movies staging a comeback now? Two words: digital production. The fact that the entire post-production and projection of a movie can now be digital has completely changed the 3D movie landscape. Of course, a movie can be captured digitally, too, but it is still common to capture a 3D movie on film, which will then be promptly digitized for post-production.

The post-production process consists essentially of editing, visual effects, and color timing, and every one of these processes are now digital making stereo post-production much more practical than the 35mm film days. Imagine physically cutting left and right eye versions of the film for every edit, or creating two versions of each effects shot on an optical printer, or color timing two versions of the movie with timing lights and acid baths. Yikes!



Then there is projection. With 35mm film you not only need two projectors, but they must also be synchronized. And the one thing movie theatre owners hate above all else is spending money on additional equipment. You also need two rolls of film (at around \$2500 per print) which break, get dirty, and wear out. A break requires editing both the left and right eye versions of the film. Dirty double prints have to be cleaned, and worn out double prints have to be replaced. Double yikes!

The modern all-digital post-production workflow now supports stereo from beginning to end. The editing systems, visual effects programs, and color timing systems all now boast stereo production support. This was the big revelation at NAB. Stereo was on everybody's lips and dollar signs in everybody's eyes. A new market with new sales and more production - buzz and excitement all around.

Digital projection also plays an important role in the resurgence of 3D movies in three different ways. First, the digital projectors themselves can project a 3D movie with a single projector - a huge win for tightfisted theatre owners. Second, the digital files eliminate film break problems as well as print costs. Third, the polarized stereoscopic display technologies of today are vastly superior to the funky anaglyph of yesteryear. Not only are the images brighter with better color and separation, but there is less eyestrain, fewer migraines, and hardly any seizures. In a word, digital projection makes 3D practical.

For the home there are already "3D ready" television sets available from Samsung and Panasonic. Other manufacturers will follow as soon as Samsung provides them with product. The first home 3D viewing will certainly be 3D theatrical releases on Blu-Ray, then will come selected satellite and cable movies, then some time later broadcast television will follow. But follow it will, as stereo video cameras become inexpensive and 3D television sets become pervasive in the home.

Is it a Fad This Time?

Not this time, and for two reasons. First, the digital production and display of 3D content is now practical and cost effective. Second, for the first time, all up and down the production pipeline, the entire industry is gearing up for 3D. This time it is not just a few brazen movie makers and a few hundred bold theatre owners. The entire world is going 3D.

So what does this mean for us in the visual effects industry? It means that we had better get stereo. Right now it is a few major motion pictures that are being produced in stereo. Soon it will be a lot of motion pictures, then made-for-TV movies, then commercials, then broadcast in general. And we have not even touched on the subject of converting a billion hours of archive film and video from 2D to 3D. But that is an op-ed for another time.

Steve Wright