

# TAKE ONE



Antz

## CyberWorld in IMAX 3-D

2000 48m prod Imax Corporation, Imax Sandde Animation, PDI, Spin Entertainment, Sony Pictures Imageworks, ExMachina, Satoshi Kitahara Inertia Pictures, Eye-Animation, Spans & Partner, REZN8, Dreamworks, 20th Century Fox Television, p Steve Hoban, Hugh Murray, d various, an various, mus Hummie Mann.

*CyberWorld* presents eight film shorts and segments of CGI animation that are recreated in IMAX 3-D, including the bar scene from the feature film *Antz* (PDI/Dreamworks), the "Homer 3-D" segment from *The Simpsons* (PDI/20th Century Fox Film Corporation), *Monkey Brain Sushi* (Sony Pictures Imageworks), *Flipbook/Waterfall City* (Satoshi Kitahara/Inertia Pictures), Pet Shop Boys "Liberation" music video (Pet Shop Boys/Eye-Animation), *Tonight's Performance* (REZN8), *Joe Fly & Sanchez - Mostly Sports* (Spans & Partner) and *KarKKen* (ExMachina), connected by original IMAX character segments directed by Colin Davies (Spin Entertainment) and Elaine Despins (IMAX Sandde Animation).

This mysterious and amazing virtual-reality film seemed to be ignored by the important film critics of Montreal when it was released last year. I have been interested in stereoscopic motion pictures since I saw my first Peter Smith special with red and green glasses many years ago, so I was astounded by *Cyberworld*. I went back to have a second look and ended up seeing it five times. Here's why.

*CyberWorld* is a collection, or rather, assembly of computer-image sequences loosely but satisfactorily woven together by a nutty but magic collection of computer "bugs." The CGI mini-stories are as sophisticated as any produced so far. For the most part, they were originally computer-memory demonstrations advertising the skills of the new breed of animators who produce feature films like *Toy Story 2* or high-gloss special effects that go into many automobile advertisements intended to amaze and sell cars despite the growing threat of the disappearance of gasoline.

We have grown a bit blasé about this stuff and respond simply by saying "it's all done on the computer," without understanding for a moment what it is. The computer is not just magic. It's another kind of animation magic almost as stunning as one of the first films I ever saw, *Skeleton Dance* by Ub Iwerks working at Disney in the early 1930s, with the music track of "Dance Macabre." But computer animation is not sim-

ply done by the computer. It is done by careful planning, drawing, rendering, animating and polishing. Real people work very hard at their workstations and are even more invisible than the 600 people who work for three or four years on lightboards to make a standard Disney animation film.

Disney made his first stereoscopic 3-D feature in the early 1950s. It was called *Make Mine Music* and was adapted from a feature-length cartoon film by shifting the peg bars of the four levels of celluloid drawings on the animation stand in order to separate the planes. It was projected on a metallic screen through polarized filters and viewed through polarized glasses. It worked. But 35mm was, and is, inherently unstable and as the prints loosened up on the sprockets after many projections, you tended to get a headache watching it. *Make Mine Music* did not get many stereoscopic projections. IMAX is a much steadier system and big enough to cover your complete retina. The new IMAX projectors have a double rotor that carries both strips of IMAX film at the same time. If you take your glasses off you will see that there is very little, if any, movement between the two images for the sensitive human brain, and no headache. The glasses are polarized liquid crystal. There is no ghosting that formerly troubled audiences. High-contrast images do not extinguish in normal polarization. But this system is not normal. It is hybrid polarization and much superior when it comes to ghosting.

The computer drawings of polygon (wire frame) geometry that describes the volume of a three-dimensional surface and the space of an environment are first made by artists, not machines. The polygons are then filled in and shaded or textured, directed and controlled by artists, not magic or not much magic at least when compared to normal animation. It gives you an image that animators call 3-D, but it is not yet stereoscopic. You now tell the camera in the computer to move over two and a quarter inches, the distance between your eyes, and you say to the computer, "do it again," and end up with a left- and right-eye image in perfect 3-D or perfectly stereoscopic 3-D. If you extend your hand, you can touch many of the characters in the theatre. The computer can render figures that can touch *you* right on the nose. Because the computer "camera" occupies no space in this

# REVIEWS



Homer in 3-D

virtual reality, objects like bubbles can pass within an inch of your cheek. You get a very tactile effect.

Each 35mm frame of a computer non-stereoscopic animation film like *Toy Story 2* has approximately 30 million polygons in it. There are 24 frames every second of screen time. Each frame *might* take seven hours or more to manipulate or animate. This whole process is heavy on human labour and human animation skills to keep all the polygons from becoming inextricably tangled. We will not even discuss the transformations of 35mm film to IMAX stereoscopy, which has 10 times the resolution or detail compared to 35mm.

If you double the image stereoscopically, you increase the real amount of image-space information by an "x" factor. In terms of *space* alone there is perhaps eight times the amount of space information in a stereoscopic image as there is in a "flat" film. This information requires more time for the eyes and the brain to process, appreciate and explore. Many people are blind to space, having been overexposed to flatness in pictures, books and television. They are more comfortable in a flat world and they also like their stories in a straight line. But these stories have little resemblance to the real world, and in terms of education for reality, flat, straight worlds have little value even as metaphors. Better for kids to throw a basketball through a hoop than be enslaved by the blackboard flatness of the classroom or a small 500-line television set. At a time when there is a very small window for the development of the child's neural net and cytoplasmic architecture of consciousness, the small flat world of television is an imposed constraint. It is hypnotic, easily understood, but constrained. A more civilized education will ultimately involve all the elements of human capacity of creative balance, whether in the discipline of creative thought, sports, film or art. Stereoscopic two-eye vision is profoundly important to human consciousness. The thrust for more information in spatial image must have something to do with this unconscious realization or search in picture-making.

Whether we think IMAX stereoscopic 3-D is overkill or that small is more aesthetically beautiful, IMAX is certainly the most "graphic" image laboratory in existence at the

moment. What seemed impossible technically 15 years ago has leaped into reality and into action. The art of stereoscopic motion pictures will evolve out of its truth – its potential for content and story. It will not be the *same* as the motion picture that have grown slowly over the past 100 years. The large screen will not be merely an epic screen but a richly intimate one, quite beyond the imagination.

In the meantime, in Montreal, Roman Kroitor [ed's note: see the *Take One* interview with Kroitor in issue No. 32] and his son, Paul, have developed a system where the animators draw in space. They don't use paper or lightboards. It's magic! This program is called Sandde (stereoscopic animation drawing device), and it produced the computer "bugs" in *CyberWorld*. They look a little like standard cell animation but they are dimensional and fully stereoscopic. The computer seems to be the bridge to the world that graphic artists have always dreamed about but despaired of achieving.

COLIN LOW **TAKE ONE**

Computer "bugs"

