

Veteran colorist **Marc Wielage** has joined **Cinesite** in Hollywood, after more than 12 years at Complete Post, where his experience ranged from color timing episodic TV shows to digital mastering features and trailers for theatrical release. He was a telecine operator and color timer for such titles as *A Few Good Men*, *Die Hard*, and *In the Line of Fire*. At Cinesite, he will be working with filmmakers on the digital color timing of films for theatrical, digital cinema and home video releases. He first project is an HD master of a four-hour director's cut of *Dances with Wolves*... *Spider-man* was created by **Sony Pictures Imageworks** using **SGI visual workstations**. SGI's **Octane** and **Octane 2** were used for interactive effects; TDs used the systems for color and lighting work. "The Octane workstations have a high bandwidth architecture, which allows for the efficient manipulation of large data sets. We also used them for texture painting," said Ted Alexandre, senior systems engineer at Imageworks. These, coupled with SGI **Onyx** systems, offered the performance and I/O for the company's near-real-time visual effects work, Imageworks reported...

Thomson Broadcast Solutions announced that it is supplying a **Specter Virtual Datacine** and a **Voodoo Media Recorder** to **Molinare Ltd.** in Madrid, as part of the company's plan to build a digital intermediate suite. The new suite joins an existing **Spirit Datacine** room. Both rooms will be equipped with the **Pandora MegaDef... Clairmont Camera**, a Los-Angeles based rental facility for **ARRI** cameras, has placed an order for 20 **ARRICAM** units. The **ARRICAM** system, a 35mm sync-sound camera system, combines **ARRI's** precision and reliability with the ergonomic feel of the **Moviecam**. Two cameras form the basis of the system: the extremely quiet **ARRICAM Studio**, and the small, lightweight **ARRICAM Lite**. Both cameras are capable of shooting 3-perforation or 4-perforation, with adjustable frame rates: the **Studio** ranges from 1 to 60 fps, and the **Lite** up to 40 fps.,



The skydiving actor in Disney's *Reign of Fire* was shot in front of a greenscreen, and composited into the plate with a dragon using Ultimatte.

Reign of Fire

The Secret Lab Fights Fire with CGI

By Debra Kaufman

In Reign of Fire, dragons blaze a fiery path to establish dominance over the earth. The Spyglass Entertainment film, to be distributed by Buena Vista Pictures, was a natural for action/scifi helmer Rob Bowman (*The X Files*). And, to create, among other effects — living, fire-breathing dragons — it was also a natural for producers to tap Walt Disney Feature Animation's special effects arm, The Secret Lab (TSL). Having created the photoreal dogs and puppies of *102 Dalmatians*, TSL had developed a robust pipeline for character animation. They also had the experience to develop code required to create CG dragons that breathe fire as well as the environmental effects.

In October 2000, co-visual effects supervisor Dan DeLeeuw and technical supervisor Hank Driskill began strategizing how they were going to pull off a dragon that needed to be photoreal enough to pose a credible threat to the live-action actors.

"We had a dynamic simulation for skin and cloth, but it wasn't evolved to the extent necessary to achieve the effects in *Reign of Fire*," explained Disney VP of Technology John Carey. "We had partial solutions for a number of the problems that the show presented, but the toolset we had needed more development and we had absolutely no solution for computational fluid dynamics."

DeLeeuw and his team focused first on designing and building the main, largest dragon. Using Alias|Wavefront Maya, they built an IK (inverse kinematics) skeleton,

MOTION PICTURES

to which musculature was added. Next came some in-house software, which enabled the skin to be controlled through deformation of the musculature. The muscle-skin system is layered on top of Maya with MEL scripting and C++ code.

They adapted already existing tools, originally created for *Dinosaur* which were expanded for *102 Dalmatians*. For *Reign of Fire*, this became a scale tool, which allowed artists to grow scales on

the surface of the dragon. Each dragon has 35,000 scales across its body, including the big spikes along its spine.

Environmental effects were another major challenge. The dragons breathe fire, which creates a constant pall of swirling smoke. The film was shot almost entirely in Ireland, which meant the frequent presence of fog and mist. And, the dragons would have to interact with these fluid effects.

The computational fluid dynamics

system, which uses Side Effects Houdini for its front end, was the work of a four-person software team: Chyuan Huang, who was head of the team and worked on the artists' tools; Patrick Dalton who created the core engine; Rob Rosenblum who worked on the rendering problem; and Lawrence Lee who tested it and did a lot of the look development work for smoke effects. Driskill acted as troubleshooter.

Not all the tools used on *Reign of Fire* were proprietary. In addition to Maya as the backbone for modeling and animation, the production made ample use of Ultimatte, Pixar's RenderMan, Steamboat's JIG volumetric renderer and Apple's Shake compositor.

All of these off-the-shelf and proprietary tools were needed to pull off a main action sequence dubbed where the (human) protagonists jump out of helicopters to throw nets on the dragons to force them to the ground. Originally, the plan was to shoot stuntmen jumping out of helicopters. But the hoof-and-mouth epidemic in the U.K. left filmmakers with only a narrow area they could shoot in. The closer the camera got to the parachutists, the more dangerous it became. That idea was eventually nixed in favor of shooting the jumpers against greenscreen.

That greenscreen shoot presented an array of obstacles to pulling a good matte. Smoke wafted up from the fires, contaminating the scene. Then there was the specific challenges of the stuntmen who, sandwiched between two supports, hung over the greenscreen and had control over pitch and roll to give the illusion they were flying

"Because they were descending, we had air movers underneath them, to ruffle their clothing in the wind, which created motion blur," recounts DeLeeuw. "And they were wearing helmets and face masks that were shiny, so we had to worry about spill."

"This is where Ultimatte played a big role," he added. "We had all the typical blue/greenscreen traps — smoke, spill, quickly ruffling clothes, motion blur. But Ultimatte was the trusty wrench in our toolbox. Ultimatte deals really well with spill suppression and builds nice edges, which is important the more there's motion blur." 🛠️

The advertisement features a grid of software versions and their capabilities. At the top left, a box says "no short cuts only transitions". To the right are three boxes for "ultimatte UAF advancedge", "ultimatte U400 4hundred", and "ultimatte U9 nine". Below these are three rows of images: the first row shows a close-up of a hand and a white silhouette of a head; the second row shows a close-up of a nose and a 3D rendered head; the third row shows a close-up of lips and a blurred image. At the bottom, there is a large "ultimatte" logo and a website URL "www.ultimatte.com".

For products as much more than a "digital layer", Ultimatte's fully linear, robust, built for Adobe, and built for motion, transparency and channels, while demonstrating that "cut it" pattern look, Ultimatte will faithfully reproduce everything the foreground image has in the final composite.

Ultimatte has solutions for your entire studio, from real-time electronics for SD and HD video production, to software plug-ins for Adobe, Apple, Final, and Microsoft post-production workstations.

Put the Academy Award winning industry standard for

the green screen compositing in your hands today

www.ultimatte.com

visit ad-click.com for more information