

What Editors Need to Know about the RED Workflow

by Jay Ankeney

We've seen the remarkable ability of the RED ONE camera to draw crowds at conventions and to tease our imaginations with the promise of recording digital cinema quality 4K images (4096x2304) at half the price of high-end HD cameras. But amidst the buzz we haven't seen much proof of its production on the big screen—until now.

Digital cinema projects shot with the RED ONE

are finally making their way through postproduction, answering whether digital systems can wrestle with these massive files.

"At the beginning, a lot of people thought our quest for the RED ONE was a joke, but since we started shipping the RED ONE last August, there are now hundreds of productions being shot with it," says Ted Schilowitz, who is credited as Leader of the Rebellion at RED Digital Cinema Camera Co.

Schilowitz said that with a camera body costing under \$18,000 and a full rig (without lenses) going for \$25,000 to \$30,000, RED ONE is an acquisition tool that has six times the resolution of HD.

"Filmmakers around the world are discovering the RED ONE as a digital, data-centric alternative to 35mm film," he adds.

RED ONE Delivers

RED ONE is proving itself out in the field, providing VFX shots on the action film *Wanted* and the sci-fi fantasy *Jumper*, as well as 100 percent of the acquisition on Steven Soderbergh's *Guerrilla*, *The Argentine* and *The Informant*. In addition, the directing team that delivered the digitally-shot *Crank* is shooting their upcoming *Game* as an all-RED feature film production. Not to mention many lower-profile productions ranging from commercials and music videos to indie film projects.

The list of films shot with the RED ONE camera includes:

- Steven Soderbergh's Che Guevara series, *The Argentine* and *Guerrilla*, as well as his upcoming *The Informant*



- *Rosencrantz and Guildenstern Are Undead*
- Rania Ajami's *Asylum Seekers*
- *Game*, from Mark Neveland and Brian Taylor (*Crank*)
- *The Dark Country* (partial)
- *Jumper* (VFX shots)
- *Wanted* (VFX shots)
- Peter Jackson's 15-minute WWI short film "Crossing the Line"

Defining the Muscle

Currently there are three approaches to recording the .r3d format file output of RED ONE. The camera has a built-in RED Flash module that can hold around four minutes of 4K wavelet-based recording on a CompactFlash card.

There is also the RED Flash Drive, which can be mounted directly on the camera body. This is a card pack comprised of two 2.5-inch 32GB solid-state Flash RAM drives for about 32 minutes of 4K footage.

For longer run times, the third option is the 320GB RED RAID Drive, which is built from two 2.5-inch 160GB laptop hard drives arranged in a hardware-based RAID 0. This gives you up to 2.5 hours of 4K recording on a dockable drive smaller than a DP's ASC manual. Needless to say, these load times will vary depending on the camera's resolution and frame rate settings.

Once the cards or drives are filled, the RED ONE's content is downloaded onto an off-the-shelf FireWire 800 Apple Macintosh HDD. Then, owing to the fact that RED Digital Cinema has had a special relationship with Apple from the beginning, Apple's Final Cut Pro 6.0.3 NLE can read the camera's QuickTime reference movies that point back to the 4K media.

As you would expect, the more computing muscle you can throw at the project, the better. For 4K work, an 8-core Intel Mac is recommended with SATA- or fiber-based storage and an AJA KONA 3 capture card. There is a good explanation of all this on the RED Digital Cinema Web site at www.red.com/red_mythbusters.

For even higher quality, you can load the raw 4K material into an Assimilate Scratch digital process system running on a dedicated high-performance platform such as the redBOXX from BOXX Technologies, which is powered by dual quad-core Intel processors and an NVIDIA Quadro FX 5600 card with SDI output. Then you will be able to monitor and even color correct your project in real-time 2K resolution before 4K output.

Or you can use Assimilate's Scratch Cine software like a digital telecine and either ingest its 2K files into an Avid NLE while converting them into Avid's DNxHD codec through the HD-SDI port just like any film shoot or offload them onto HD tape and feed the footage into any tape-friendly edit system.

RED ONE Post Players

One of the West Coast centers of RED ONE postproduction is Hollywood's PlasterCity Post. Its founder and digital intermediate supervisor, Michael Cioni, tells us they are in the process of posting 16 features shot with the RED ONE camera whose budgets range from \$1 million to \$75 million. It's such a paradigm-busting technology that some of the studios were reluctant to mention the use of this new camera before their film's release, but Cioni was able to go into detail about posting the new music video directed by Brandon Dickerson that was designed to accompany Disney's early summer hit, *The Chronicles of Narnia: Prince Caspian*.

"What we found amazing was the ability to intercut 35mm film footage with files from the RED ONE," Cioni says. "The DP on the project, Martin Coppen, wanted to use the same lenses to create the same image look as obtained from the film camera to maintain consistent aesthetics. They shot 4K; we mastered in 2K and used the raw files from the camera to preserve the highest quality."

Cioni's team edited the project directly on their Scratch system and created an ALE (Avid Log Exchange) file to conform the final master on an Avid NLE using Sony HDCAM SR tape.

"We used the tape for transportation, since this whole project had to be created in real time," Cioni says. "We didn't want the RED ONE to be accused of costing us valuable time for transcoding its files or waiting for renders. After all, we knew people would be comparing our process to the standard turnover for film-based post. If you know how to do RED right, it works great."

New Opportunities

On the East Coast, OffHollywood in New York was the owner of the first two publicly available RED ONE cameras and used them on projects such as Rania Ajami's fantasy feature *Asylum Seekers* and Jordan Galland's comedy vampire film *Rosencrantz and*

Guildenstern Are Undead. John “Pliny” Eremic, the director of post/operations at OffHollywood, says they conformed these projects directly out of their Scratch system because it handles the RED files natively in their raw form.

“When people see this process in action, their jaws just drop,” Eremic says. “But it takes considerable effort to learn a new postproduction workflow, and some people have had trouble learning how to process the RED files properly. The great thing about the RED ONE camera is that the price point is so low [that] it is bringing in a whole new community of users. But many of them are novices to digital postproduction, so they really need the help of a post house with experience when launching into it. That opens up whole new areas of business for us.”

The limits of the RED ONE revolution are not yet in sight. At the 2008 NAB show, RED Digital Cinema announced their even higher resolution Epic that is touted to shoot 5K images. Why? “Bigger screens will require bigger files, and more resolution is always better,” Rebellion Leader Schilowitz says. “We don’t like standing still.”