



## **Traditional Horror Film, “Scourge” Encounters the New Dimension of Tapeless Filmmaking with the Wafian™ HR-1 HD Direct-to-Disk Recorder**

### **Dreaming of a Tapeless Workflow**

When Vancouver, B.C., based **PHD Productions** was in pre-production, it was the dream of **Andrew Bronstein, Producer, Jonas Quastel, Writer/Director**, and **Corey Robson, Director of Photography**, to have a tapeless workflow – a complete digital intermediate production. The team's research and numerous industry recommendations brought them to one conclusion – capture from camera directly via HD-SDI; bypass tape compression; and preserve the pristine image quality with the Wafian HR-1 HD direct-to-disk recorder. The appeal of the tapeless workflow was extended by having a high quality HD digital master that would stand up to the demands of multiple generations of visual effects; streamline their editing to always being online with no conforming or proxies, and to ensure image integrity and ultimate flexibility in their final delivery options.

### **Tying the Technologies Together**

The PHD Productions team was confident that their all digital production would embark on a new and cost effective workflow for independent filmmakers.

### **Cross Platform Compatibility**

The film “Scourge” required the talents of several post production artists using the best tools for the job. There were no hindrances as the Wafian HR-1 was able to capture an uncompressed HD-SDI signal and seamlessly record in real-time a Windows compatible .AVI file or MacOS compatible .MOV file using the award winning CineForm Intermediate™ Wavelet based codec technology. The film's editor, Jesse James Miller had just switched from Avid to Apple Final Cut Pro and needed to edit the QuickTime (.MOV files) sequences that would be passed on to the visual effects artists. With no slight of hand these sequences imported into the Windows based compositing and animation applications as .AVI files.

### **JVC GY-HD250 Selected for Principal Photography**

The team was originally planning on shooting with the Panasonic DVCPRO HD P2 camera; however were rethinking what camera would be the best choice for HD acquisition and recording direct-to-disk. The new JVC camera supported HD-SDI output, which was a key component for ensuring the highest quality 4:2:2 uncompressed HD signal would be captured directly into the Wafian HR-1. Another key factor in their choice was the JVC GY-HD250 having a hard focus on the lens. They also wanted to achieve the fantastic look of film, and outfitted the JVC GY-HD250 with the Redrock Microsystems M2 35mm cinema lens adaptor using Prime Lenses. This camera setup was connected directly to the Wafian HR-1 via HD-SDI cable and the uncompressed signal was captured in real-time and ‘flipped’ into proper orientation, ensuring a seamless workflow while retaining the desirable filmic visual quality.

### **Production Begins**

The technologies were in place, and it was time for “Scourge” to come to life. Andrew Bronstein selected Jonas Quastel, [www.quastel.com](http://www.quastel.com), to write and direct this film as Andrew describes as a “little bit of creature, and a little bit of romance - good entertainment”. The story takes place in current time as the creature “Scourge” is woken by a church fire. “Scourge” moves from possessing one body to another slowly devouring its victims until it becomes a viable entity. In the process, a love story evolves as two of the town's younger members seek to discover the secrets held by the creature.

Writer/Director, Jonas Quastel felt confident during principal photography as he stated three guiding factors for this production, “we require the highest quality digital master that can blow up to film print with less artifacts plus more color depth...and at the right price”. Quastel added, “The Wafian HR-1 delivered



on all of these – the results were amazing and finally got the tapeless workflow I had been wanting for years”!

### **It Just Works! (Production Notes)**

The JVC GY-HD250 with Prime lenses was hand held for the whole production, giving an edgy “24”ish look to the film. The team was concerned shooting this way and being tethered by a 150 foot HD-SDI cable connected into the Wafian direct-to-disk recorder. Happily, their fears were unrealized as they expertly maneuvered the Wafian on its own dolly, additionally having no problems with a scene shot on an ice skating rink. The crew was mobile throughout even shooting car scenes as the Wafian was powered in the back seat with a 1,000 Watt inverter.

From the Wafian HR-1, the signal was received and monitored with DOP, Corey Robson’s custom built rack-mount HD cart. Corey is also a Digital Imaging Technician “DIT” holding that technical honor as one in less than a hundred in the world. Director Quastel was free to monitor the image instantly as captured from camera to the Wafian and displayed from Robson’s cart to the 23 inch LCD panel in 1900 x 1200 resolution. Corey was also keeping his watchful eye on the cart’s waveform vector scope and the team had 100% knowledge at all times that the purest picture was being produced and recorded with no drop-outs to the Wafian.

### **Instant Dailies and Continuity Checking**

There was no loss of time or the considerable costs of film processing normally associated with producing dailies. With their compressed online DI workflow, Bronstein, Quastel and Robson had instant review of their shots and equally important, continuity checking from scene to scene ensuring that the actors placement, wardrobe and camera’s point-of-view was consistent. For Director Quastel, it was best stated, “Amazing, I couldn’t be happier with cutting out film transfer – what you see is what you get”!

### **Capture Picture + Sound**

A big lesson learned for Jonas Quastel was to capture picture + sound directly into the Wafian HR-1. Earphones were donned by Quastel providing instant knowledge if there was anything wrong with the audio – or if there was no audio being captured due to technical mishaps. By monitoring both picture and sound directly from the Wafian, he could check accuracy for both. This was invaluable and saved heartache, time and costs associated with having to go back and re-record lost dialog. For backup purposes they had the traditional external audio capture.

### **That Secure Feeling**

From the Wafian HR-1, affordable 500GB drives were backing up the day’s shoot. Not only once, but twice – so at any one time there were three copies of the film in progress. Since they were working with a visually lossless compressed CineForm Intermediate files – the storage required was minimal as compared to uncompressed. The average storage required was about 70GB/hour for 1920 x 1080, 10-bit, 23.98fps images. “Scourge” resides on a mere 1.5TB of disk space! While in production they were shooting at about a 10:1 ratio and never had to worry about saving disk space or off-loading because their drives were filling up. Instant access to the whole production, all the time, with everything backed up – now that’s a secure feeling.

### **Digital Master Holds Up Beautifully to Heavy Visual Effects**

The team selected Artifex Studios [www.artifexstudios.com](http://www.artifexstudios.com) to create the CG “Scourge” character and for the film’s visual effects work. Quastel and Director of Photography, Corey Robson will deliver the sequences on removable disks to Artifex, as captured by the Wafian and stored in the CineForm Intermediate format. The CineForm Intermediate visually lossless 10-bit codec would ensure the highest quality master images would stand up to the demands of multiple generations of layering required for



keying and associated visual effects. Both companies can work seamlessly with these files regardless if they are using Windows or MacOS based applications – with .AVI support and .MOV support.

### **A Streamlined Way to Make Films**

It's a leap of faith as Bronstein, Quastel and Robson chose a new path to make their film. They certainly did their homework on every facet of the production, but they are the first to state, "It's not just the technology, but the people who are behind it – that's what made the difference". "Scourge" is now in post production and is scheduled for completion for the November 2007 American Film Market.

Andrew Bronstein resoundingly states, **"It's a great new time, it's a great experience. There is a lot more to gain by making films this way. A true eye opener and I'll continue making films this way"**. And that's a wrap.