

### Sony HVR-V1U HDV Camcorder

reviews

Douglas Spotted Eagle



**SYNOPSIS:**

The Sony HVR-V1U isn't going to replace anyone's CineAlta camcorder my time soon, but regardless of the level of video production, this camcorder fits into the kit nicely. It's the first HDV camcorder to deliver 1920x1080 video in a true progressive mode, and will benefit any budget professional or high-end shooter looking for a second camcorder for those tight shots a shots that are simply not practical for a higher-end camcorder.

**PRICE: \$4,800**

**FOR MORE INFORMATION, CONTACT:**  
**Sony Electronics**  
[www.sonystyle.com](http://www.sonystyle.com)

**P**ro video production has never been more affordable nor more independent than it is today, and it appears that production tools are only going to become less expensive and more powerful as time goes on. Ironically, just as affordable production in the standard-definition world has started to become commonplace, the industry has begun its shift to high-definition. HD in various flavors now strikes at every price point imaginable; talent and tools become the true delineating factors in the industry.

The behemoth of the video production world, of course, is Sony, and Sony is constantly bringing new tools to the independent producer. September 19, 2006 marked yet another milestone in the migration towards and availability of high-definition tools with the introduction of the Sony HVR-V1U, smaller sibling to Sony's popular HVR-Z1U.

The new Sony HVR-V1U is the newest low-cost HD tool available to indie producers, and while it's lightweight and compact for a pro camera, it packs a heavyweight

tool set. It acquires images at a full 1920x1080 resolution using three 1/4" imagers. The CMOS imagers employ a new technology that allows the camcorder to interpolate pixels from the imager's block size of 960x1080 pixels (for more on CMOS, see UX1 review, pp. 57-60). Placing pixels at a 45-degree angle and using low-profile technology results in greater sensitivity and sweet, smooth color processing. Additionally, the camcorder processes the image at 1920x1080, with a 4:2:2 sampling scheme throughout. The image is maintained in this format until it reaches the output stage, when the image is downconverted to 1440x1080 for output to tape and/or component output.

This means that users employ the camera in a studio setting with a 1440x1080, 4:2:2 uncompressed image, or output to tape or hard drive as a 1440x1080, 4:2:0 signal.

The HVR-V1U is also a true progressive model, meaning it currently is the highest resolution progressive camcorder in the sub \$15,000 range. Unlike other imagers of lesser resolution, the HVR-V1U does not double lines,

*This un-retouched capture is from the V1U's video image, not from the 4-megapixel still-shot capability of the camcorder. Note the depth of color, smooth contrast, and clean lines.*

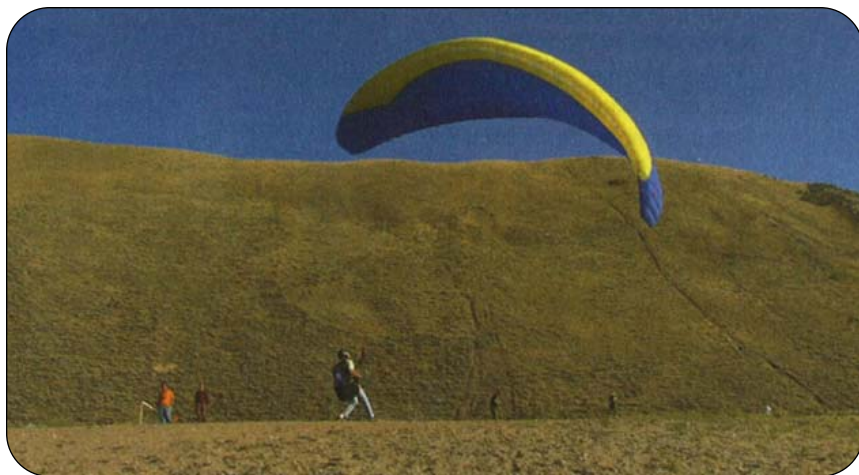
split images at acquisition, and recombine them in post processing. Nor does it resample pixels to generate the 1080 lines of resolution in the progressive format, making it as much as 60% greater in overall resolution than its competitors.

CMOS offers not only a means of achieving great images in this camcorder, but the lower power consumption of the CMOS chips means that the camcorder can go longer on standard batteries. Up to eight hours of recording time is possible with a standard FP970 battery (see *Gear & Now*, p. 14). This allows for significantly longer recording times not possible with CCD chips. CCD technology has been approaching the point where its maturity may well begin to work against it as processors become faster and resolutions climb higher. While previous CMOS cameras have yielded greater picture noise, technology has caught up to the lower-cost imaging device. Dubbing their new technology ClearVid, Sony offers videographers reasonably good low-light sensitivity with extreme resolution and clarity. The low-profile pixels, coupled with Sony's exclusive digital system processing (DSP) system known as Advanced Image Processing, works very well, and the pictures speak for themselves. And truly, that's where the money shot is – the images.

## QUALITY AND CONTROL

Videographers often get into heated arguments about resolution, pixel shifting, upsampling, expansion, compression, codecs and the like. Such debates are fun in the abstract, but futile in the decision-making process. Picture quality and creative control is what we're all after, and the picture quality and "painting palettes" of the HVR-V1U will excite the creative muse in any videographer who looks through the eyepiece.

Up to 26 camera profiles including picture profiles, color range settings, progressive or interlaced formatting, and such may all be stored on a built-in Memory Stick (not included) found in a discreet panel which also houses USB 2.0 and HDMI outputs. This is a great feature for multiple camcorders, as users can exchange, store, and upload/download camcorder settings over memory sticks and the internet. Speaking of multiple camcorders, the HVR-V1U offers an innovative method of matching



timecode from camera to camera that uses the i.Link/FireWire connection. Choosing one camera as a master, other camcorders may be matched/slaved to the master, making it much easier to sync media in post.

Picture profiles in the camcorder are similar but more mature than the picture profiles found in the older, bigger brother HVR-Z1U. In the V1U, the picture profiles not only offer many settings for color, phase, sharpness, etc., but also include what Sony has dubbed the 3D LUT (Look Up Table). Sampling color from film stock, the 3D LUT provides color behavior that is remarkable and instantly appreciable.

Coupled with 24p or 30p images, this is the camera for those seeking a film look but a video workflow. Film is still film; however this camcorder very closely imitates the analog medium for those seeking that look. However, if you're looking for sharp, fast images with tremendous contrast and clarity, the camcorder also offers a Contrast Enhancement mode that divides the image into a contrast table, processes the image, and recombines the chroma and luma information in the DSP system. Depending on how the scene is lit, this tool can be exceptionally useful or simply interesting and a point of conversation. I found the contrast enhancement to be exceptionally useful in heavily shadowed images, allowing for incredibly clean lines in spite of the amount of definition of a black line against a white or lightly calmed background.

Zooming from a reasonably wide 37 mm to approximately 750 mm focal length, the V1U also offers a Digital Extender mode. Everyone knows that digital zoom is for amateurs and soccer moms, but that has changed with this particular camcorder. Using the addressable CMOS system matched to the proprietary DSP system, the digital zoom takes on a new meaning in the evolution of the HD camcorder world, as the image below illustrates.



*The detail seen in this image is captured using the Digital Extension feature of the HVR-V1U, allowing a zoom equivalent to an 1100 mm zoom lens. This is a handheld shot, soft stabilizer enabled.*

This hand-held frame has the soft-stabilizer mode enabled (the camcorder offers four stabilizer modes) and is at an exceptional distance from the subject. Yet the stitching on the pilot's pants and lugs in his shoes are clearly detailed without the macroblocking and pixelation usually assigned to the concept of digital zoom. Even the hairs on his legs are clearly discernible, which was surprising to me when I viewed this footage frame by frame, on a 2k projector at a size of 40 feet, or approximately life size in scale.

### **TIMELAPSE**

Timelapse is a feature that not all videographers need, but it's fun to play with, and the HVR-V1U offers an intervalometer/timelapse feature. Here is one place the camcorder might be improved in the next generation, since there aren't enough options. With image capture limited to variable, from 1 second to 3 seconds at intervals ranging from 1 minute to 30 minutes, there just aren't code enough options. We tested this feature during a 24-hour world record attempt in Greensburg, Indiana, and while the images were sweet even in the dark hours of the morning, there just weren't enough options to give me exactly the cadences that I wanted.

However, it's noteworthy that the V1U kept functioning even when completely drenched in early morning condensate. The camcorder literally was dripping water

*This frame grab shows the extreme detail even at 20x, but just as importantly, note that there is no aberration on the edges of the frame, no banding, no blocking, and no artifacting at the extreme edges of the optical zoom.*

from the eyepiece and body, as I hadn't considered the need for a warmer and raincoat. The footage derived from the timelapse ended up on ESPN, CNN, MSNBC, and other major broadcasters, with all of them praising the quality and clarity of the timelapse.

### **OPERATION**

While manually operating any camcorder is most advisable, the HVR-V1U offers newcomers to manual operation a few tips and assists. Even when in full automode, the camcorder is capable of displaying the aperture, focus, shutter speed, white balance, distance, and other related settings. This will help auto-users of the camcorder learn to become manual users, which is where the true power of the camcorder lies.

Knobs, switches, and wheels are very well thought out in this camcorder, since they are all within a thumb's reach of the left hand as you're operating the lens and zoom features of the camcorder, Auto focus, instant focus, manual-to-auto exposure, expanded zoom (for focusing), and ND 1/2 are only a thumbslide away, making this easy to adjust. The lesser-used Gain, Shutter speed, and White Balance buttons are found on the back of the camcorder.

Second-generation LCD display offers a sweet view, even though it is lower in overall resolution than the highly acclaimed HVR-Z1U LCD panel. Aiding in the quest for sharp focus, the LCD panel coupled with the advanced Peaking features of the HVR-V1U make it



*I also tested the camcorder at extreme speeds, and as this image of a world-record skydiver indicates, the fully auto mode in 60i is sweet and clean as well, although the interlacing affects detail in a still shot, as one would expect.*

easy to achieve a clean focus on the fly. Additionally, determining proper exposure is easy as well when the Histogram and Zebra modes are used in tandem. Histogram and Zebra may also operate independently of one another.

The features of the HVR-V1U are well thought out, well placed, and exceptionally well implemented. There are a few caveats. Most importantly, Sony has significantly increased the number of assignable button functions while not adding any new assignment buttons. This is a bit frustrating, but it's the price you pay for packing a lot of tools into a small toolbox. At least three more buttons would be highly appreciated. Additionally, I feel the power button is backwards; moving it up turns on the camcorder mode, moving it downwards puts it in VCR mode. It seems more likely that one would accidentally bump a button downwards than upwards. A minor point, but one worthy of consideration in a next generation.

The camcorder uses yet another lens size of 62 mm, requiring another size of wide-angle adapter, but a standard mattebox will fit on the camcorder. If you've got multiple camcorders, a mattebox is the preferred method of using filters, as there is no need for multiple filter sizes. Sony does offer a bayonet mount for their zoom-thru wide angle adapter, which is a nice consideration for wedding and event shooters needing to go from wide to standard focal lengths in a blink of an eye.

Currently, no NLE manages 3:2 pull-down flags for 24p. Sony Media Software has indicated that Sony Vegas will manage pull-down in an update around the same time as the HVR-V1U begins shipping. The camcorder does not use the Advanced Pulldown system that DVX100 shooters are familiar with; the GOP format doesn't require the frame decoding boost that the DV format requires for 24p.

The HVR-V1U also offers a great graphical interface for owners of their DSR D60 Hard Drive Recording system. Data from the HDD recorder displays in the System Check screen, keeping users apprised of battery condition, recording time, recording format, and other parameters of the device. The Sony HVR-V1U isn't going to



replace anyone's CineAlta, but regardless of the level of video production, this camcorder fits into the kit nicely. It can serve well as a small second cam to complement a larger production system or as the centerpiece of a smaller boutique production system. It will benefit any serious hobbyist, budget professional, or high-end shooter looking for a second camcorder for those tight shots or shots that are simply not practical for a higher-end camcorder.

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