HD ‘REAL LIFE’ VISUAL CONTENT

MERGING ART WITH HD TELEVISION
by Ali Hossaini

UGLY BETTY: FILMING COMEDY FOR HDTV
by David Heuring

AMERICAN CHOPPER AND THE HDX900
an article by Brian Cali
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by Greg Altman

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NEW 2/3" P2 HD CAMCORDER

Panasonic introduced their newest addition to their P2 HD camera line – the AG-HPX500. This new shoulder-mounted P2 HD camcorder combines full production-quality 2/3" 3-CCDs, DVCPRO HD, 4:2:2 sampling and independent frame encoding with the versatility of interchangeable lenses and creativity of variable frame rates. The 8.2-pound HPX500 records in 32-bit memory camcorders. Teams of PANASONIC P2 HD RECORDS Unwrapped Boats, World's Most Extreme Homes, the Food Network HD to its high definition programming. The purpose of the series is to provide a "fresh, new look" at the people, activities and landscapes that make up the USA. The shows were shot on Panasonic AJ-HDC20A, and AJ-HDC 27V, HDCPROHD cameras.

CABLEVISION JOINS HANA BOARD

Cablevision Systems Corp. – operating the nation’s largest cable cluster – joined the Board of the High-Definition Audio-Video Network Alliance (HANA); it was announced recently by Dr. Haemin Kwon, HANA Chairman and President and Director of Engineering at Samsung. The focus of the organization is to develop a series of one hour television programs on the wonders of HD technology and its applications. These HD programs, the goal is to educate, entertain and engage the viewers in the world of HD technology. The original series, titled "Discoveries…America" was a collection of video essays with unique aspects of a particular state. The series has completed nearly 5 years of HD production principle for Trinity Broadcasting Group to convert the live 720 60p, 19 Megas MPF-2 3.7 points in the HD-E version, the highly portable lens also features in this DVCAM port to ASI then feed our digital microwave transmitters in the tool for transmission to the station where we decode back to HDSDI for feeds. This provides an affordable solution for live HD remote since the camera not only produces native 1280x720 60i HD video sources but also has built in HD encoder for transmission. 7.3-AIF offers a focal range of 7.3mm to 117mm to study construction with a small package to be a cost efficient version for HD production. The lens has been designed for camera HDD studio built by TV Magic supporting the network’s popular Popular Drama and the Lord television program, among others, which is broadcast daily to millions of viewers worldwide.

LEADER INTRODUCES LV9800

Leader’s new LV9800 Multi Monitor Platform provides all of the facilities needed for today’s demanding video test applications. Its modular design permits the addition of input and output options as needed for each specific monitoring station and helps system designers optimize equipment use by utilizing the proper options set. A built-in XGA display (1024 x 768) provides superb, crisp waveforms and picture representations. It can monitor and display up to four sources at the same time (2 SDI input cards required). As well, the platform supports options such as Data Analysis, Physical Layer testing/Eye Pattern and Audio testing and these options can be installed at a later time as needed.

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FOX STATIONS ADOPT P2 FOR ALL O&O’s

Panasonic signed a three-year agreement with the Fox Entertainment Group, Inc. to supply P2 HD and P2 solid-state memory camcorders. Terms of the three-year agreement, Panasonic will supply AJ-HPX2000 2/3" P2 HD camcorders, AJ-HLM100 P2 HD mobile recorders, P2 Cards as well as P2 drives and other P2 products.

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The hit drama 24 kicked off its sixth season this year with a bang. Over 15.7 million viewers anxiously tuned in to watch the two-hour season opener that featured a series of terrorist attacks. The episode opens with live TV news coverage of the bombing aftermath as people at a bus station watch the live breaking news coverage.

Although 24 is shot on film, a considerable amount of HD video is used for the show to provide ‘real life’ visual content. 24 utilizes JVC’s ProHD GY-HD110U to shoot HDV for presidential addresses, surveillance video, news footage, and playback of news segments. Previously, the series used the PD150 DV camera, shot at 60i and then converted to 30p.

Rodney Charters, Cinematographer of 24 since season one, chose JVC after an extensive evaluation of JVC, Sony, Canon and Panasonic cameras. “JVC was the most professional camera with the ability to shoot true 24p. What sold me was that the camera came with a professional lens from Fujinon,” said Charters. “All the controls are in their logical place and the camera has a proper zoom control.”

“The first thing we did this season was to shoot footage of emergencies such as a bomb explosion aftermath, victims in the streets, fire and emergency equipment on the scene, people coming out of buildings screaming and emergency personnel helping the injured and traumatized – all shot with the HD110,” said Charters.

After acquiring astounding image quality with the camera, Charters decided to use the
HD110 to shoot selected background plates in HD. The camera replaced the standard definition PAL 25p format used previously. “There are scenes that we start to shoot on location, in a stopped vehicle, for instance that we will split between this exterior location and the interior of the vehicle. For convenience, we will move back to the stage and continue to shoot as a process shot,” said Charters. “For these plates we use HD 720p format because the resolution is much better. For example, there’s a scene shot on location where someone is in a car on a street and gets killed in broad daylight. We decided to use the HD110 to shoot these types of scenarios because we wanted to do more shooting on the stage. So, I shot a series of plates at this location, using the HD110. I imported the footage through Final Cut Pro and placed them as a Quicktime loop out of my laptop (Macbook). I set it as a recurring loop and placed my laptop on top of the projector, driving it with a cable right out of my laptop at 720 x 1280,” said Charters.

Charters further stated, “We have never had a problem with the PAL DVCAM footage while in motion, but problems do arise the moment you stop the vehicle as your eye needs to see better resolution than DVCAM’s 720 x 480.” Discussing the image quality and versatility of the HD110, Charters recalls a situation where one of the editors felt they had an incomplete sequence and needed a close-up reaction of an actor. “Editor, Scotty Powell, who owns an HD110 for his documentary work, took his camera out into the parking lot and shot footage of a driver in a car, David Latham, another 24 editor. He did a quick zoom and a push on him as though he was reacting to something as he drove by. After, we blew up the footage on a Miranda box to DS at 1920 x 1080 at Level 3 and dropped it into the proper 24p timeline on the DS master it went to air like that. It works very well to blow up short clips to the timeline. The only difference between this image and the Spirit captured DS from our Super 35mm negative photographed on our Panavision XL cameras is the almost infinite amount of depth of field from the small 1/3 inch chip compared to film’s depth of field from our 1-inch gate.”

“I am really impressed that JVC has come out with the 16 mm film lens adapter (HZ-CA13U FL) to help solve this problem,” said Charters. “The problem is simple Shallow
DOF = Drama. The wider the depth of field, the less likely that the footage will keep people engrossed in the frame suspending their disbelief as you tell the story. When you look at the numbers for 16mm they are way better than HDV standard lenses.”

Shari Odell, 24 video camera operator for seasons five and six, explains her work using the HD110, “All the HDV footage we shot was edited into “real news stories” to appear as if it was footage pertaining to the story-line,” added Odell. (There were three HD110 camera’s shooting simultaneously). “Footage of HAZMAT crews; long shots of the horizon where mushroom clouds were added in post; panicked residents of suburban neighborhoods trying to get into the homes: all shot with the HD110.”

Odell stresses the importance of the HD110 focus assist feature when shooting on location, “No matter what you’re shooting, JVC’s focus assist is a key feature. The focus assist is very important when shooting in HD because everything looks great on a tiny viewfinder, until you blow it up on a big screen. So, the focus assist lets you know exactly where you’re focused.”

The HD110 has many wonderful attributes that are extremely beneficial when shooting video,” said Odell. “The camera has the ability to boot between Standard Def and a 4x3 aspect to a High Def 16x9 aspect in a matter of a minute. When we shot surveillance video, it was typically shot using a 4x3 aspect; everything else used a 16x9 aspect ratio.” “JVC’s camera is compact and operates like a true professional camera with all the professional controls including gain control and white balance presets,” said Odell. “And the

**Comparison chart Depth of Focus**

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**Vector Scope Mode**: Color Bar Scale (100%, 75%), IQ Axis Identification: Line Select Function: Enlargement Identification (x1-x2)

**New Function**: configuration for ultra quiet operation during sound sensitive shoots. New preset buttons (5x) on the front panel allow for easy access to users preferred settings. Freeze frame feature allows for comparison between live shot and recorded frames (display and waveform) without the need for external equipment. Marker identification (center, frame, 4:3, 13:9, 14:9, 2:35:1, 1.75:1, 1.66:1).

**Adjustment function**: Contrast, Brightness, Chroma level, Chroma ON/OFF

Audio status identification

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fact that it’s 15 lbs. lighter than other cameras makes a big difference when it’s on my shoulder for hours at a time.

All the footage captured by the GY-HD110 is seamlessly integrated into 24’s existing editing process because of the camera’s true 24p capture. According to Paul Gadd, co-producer, “JVC’s footage is just as easy to work with as miniDV; we simply load it into our Avid and intercut it. The footage looks amazing…it’s so good that when we intercut it with real news footage, the real news footage looks bad. And, using the HD110 saves us a great amount time in the editing process now that he don’t have to convert 25p frame rate plates to 24p.”

“JVC’s goal is to provide a workflow path where content created with JVC products can easily be integrated with prominent editing and distribution systems in the industry,” said Craig Yanagi, national marketing manager, creation productions, JVC Professional Products Company. “As HDV-based images continue to be interwoven with film productions, products from interface bridge manufacturers will address the need for direct uncompressed ingest of HD content into editing systems. Forthcoming HDV encoding devices will additionally provide the infrastructure to grow HDV platform content, making the HDV platform the lowest cost HD storage medium available on the market.”

According to Craig, JVC engineering works closely with professional lens manufacturers Fujinon and Canon to provide a wide selection of HD lenses built specifically for their cameras. JVC has also further expanded their camera lensing capabilities to use prime film lenses. “In response to feedback from our users, JVC has designed the HZ-CA13U PL mount film lens adapter that enables the use of traditional film lenses, providing even greater creative flexibility.”

Charters feels that the future of HDV looks bright. “I’m very impressed with the quality of the JVC camera on all levels. I’m keen to find out how well JVC’s new 16 mm film lens adapter (HZ-CA13U PL) will help open the field for wider drama use. It offers a lot of promise and I hope to get my hands on one soon.”
Ugly Betty:
Filming Comedy for HDTV

by David Heuring

The visually fresh ABC television series Ugly Betty recently captured two Golden Globes: one for America Ferrera, who portrays the title character, and another for Best Television Series-Musical or Comedy.

The show is a visually sophisticated recreation of a hit Columbian telenovela. The set design, editing and cinematography use recurrent circle motifs and layers of glass to create depth, which cinematographer Ross Berryman integrates into the storytelling.

Berryman photographs the show on stages at Raleigh Studios in Hollywood. The environments were created by production designer Mark Worthington. The main sets are the offices of Mode, a high fashion New York magazine, and the interiors of Betty’s Queens, New York, home. The Mode offices are sleek, highly stylized and modern with built-in lighting, glass walls and intersecting corridors. Betty’s home is the complete opposite—frumpy, colorful and down to earth.

“It’s a pleasure doing a show that values interesting visuals,” Berryman says. “When I saw the pilot, I could see that the show had a lot of visual potential. I’m looking forward to see where we’ll take it next.” Worthington notes that the Mode sets include a great deal of integrated lighting, making his collaboration with Berryman crucial. “Ross and I were in agreement about so much—both technically and creatively—that we were able to solve problems quickly,” he says. “There are multiple set pieces and furniture that are backlit or glow. In some cases the lack of space makes the integrated lighting the main source of light for the actors. Ross is energized by these challenges and is always interested in solutions that serve the overall look. A good lighting solution is also a good scenic solution.”

Berryman says, “The sets were designed to be as friendly as possible for Steadicam shoots. For example, the offices were designed to allow for easy access with a Steadicam rig. The color schemes were chosen to make the actors feel comfortable.”

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Clairmont Camera president Denny Clairmont knows cinematography. His company, which he founded in 1980, has grown into one of North America’s largest rental facilities. Denny also knows outstanding quality, and counts Canon’s HD-EC Zoom Lenses among his favorites. From our newest 8x Zoom (HJ8X5.5 B KLL-SC) to our HJ 11x4.7 B KLL-SC and HJ 21x7.5 B KLL-SC, Canon responds to the creative and budgetary requirements of cinematographers everywhere with optical performance and mechanical and tactile imperatives that satisfy critical standards. Canon’s innovation and engineering excellence is also apparent in our unique ACV-235 Anamorphic Converter, which can be used to record a CinemaScope© size image with an HD-EC camera, as well as our full line of Prime Lenses. Industry leaders like Denny Clairmont are impressed with Canon. Whether you’re shooting episodic TV, commercial production, or major motion pictures, take a closer look at us.
work and 360-degree shots. A circle motif is repeated throughout the design, as well as in the optics and transitional effects. Together with a lot of glass, those touches give the sets a lot of interesting depth and character."

Berryman normally covers the action with two cameras, a Panavision Platinum and Millennium XL. He records images on KODAK VISION2 500T 5218 film in the 35 mm format. "The VISION2 Kodak stocks are tremendous," he says. "I am constantly impressed by the quality and malleability of the stocks."

"Film's wider, more forgiving contrast range is better suited to the visual choices we've made on Ugly Betty," says Worthington. "That was a factor when we were designing the very light color palette we use in the Mode offices." Berryman frames Ugly Betty in 4:3 aspect ratio and protects for 16:9 because the show airs on both the ABC standard and high definition channels. The film is processed and converted to HD format at Complete Post. The dailies timer is Rick Brunick and the colorist is Wayne Hampton.

"I have an HD television at home," says Berryman. "The difference between HD and standard definition is like night and day. Our sets look fantastic in 16:9. More and more people are seeing the show in HD. The 16:9 frame is much more interesting in terms of composition. You can get more people into the frame and reduce the amount of coverage needed. I also love the richer looking images."

Worthington adds that cinematography and production design are two different means to the same end. "Both disciplines utilize the visual image to build a narrative that conveys meaning and emotion," he says. "A unity of creative vision is always the ideal. I think that Ross and I have come very close to realizing that ideal on Ugly Betty."
Reality show American Chopper returned for a fourth season, this time on Discovery Communications’ The Learning Channel. And now, all of the smooth chrome and bike action is captured in HD with Panasonic’s AJ-HDX900 2/3” multi-format DVCPRO HD camcorders.

Pilgrim Films & Television Inc. (Sherman Oaks, CA) purchased five HDX900 cameras to support production of the new season of American Chopper, which premiered on January 18, 2007 and is now the cornerstone of a new block of programming, Turbo On TLC. American Chopper follows the various business and social activities of a colorful, sometimes volatile father-son team who build some of the world’s most creative custom motorcycles in their own shop. The hour-long program stars Orange County Choppers Paul Teutul Sr. and Paul Teutul Jr.

“We used Varicams exclusively on the previous three seasons of American Chopper (which aired on the Discovery Channel), and also shot a caving pilot (What Lies Below) in Iceland where the cameras captured the magnificent imagery beautifully,” said Craig Piligian, executive producer of American Chopper and owner of Pilgrim Films. “But because we shoot American Chopper (and Hazard Pay, Dirty Jobs and Really Big Things for the Discovery Channel) in 30p, the Varicam, while a great camera, is more than we need, as we’re not shooting with variable frame rates. When Panasonic came out with the HDX900, we found it to be the perfect combination of a great picture in 30p at an affordable price.

“The HDX900, like the Varicam, allows
us to capture the full range of contrast we experience on location,” Piligian continued. “The reds and blacks pop off the screen. The motorcycles crafted on American Chopper are works of art, and these cameras allow the viewers to see the details of the bike and the color with accuracy. Until these cameras came along, the color was never quite right. Now, watching it on TV is just like being in the shop.”

“One of the great features of the HDX900 is the ability to set scenes within the cameras,” the producer noted. “Since we shoot all of our shows multi-camera (American Chopper, Dirty Jobs, Hazard Pay and Really Big Things are all shot in DVCPRO HD), the scene selection makes it possible for all cameras to set a location with matching settings and return quickly to that setting when they leave, enabling us to maintain matching cameras and lessen the need for color correction.”

“Logistically, American Chopper as well as our other shows can be challenging,” Piligian said. “From inside industrial factories to hot desert settings to big Hollywood events, we shoot in a variety of environments. We are running these cameras at full force for eight to 10 hours a day in every type of environment, and they respond with great HD images every step of the way.”

In post the tapes are downconverted to mini-DV using the Panasonic AJ-HD1400 and the AJ-HD1200A DVCPRO HD decks for playback. The SD tapes are digitized into an Avid Unity, and shows are edited on Avid Media Composer Meridians. When we have a locked picture, we online our HD shows on an Avid Symphony Nitris," the producer said. “When we deliver the finished product to the network, we output to HDCAMSR and it is in the 1080i format.”

“Pilgrim Films has put Panasonic HD cameras to the test for three years now," Piligian said. “We researched different cameras, did multiple camera tests and looked at the entire post path and how shooting at 30p on DVCPRO HD tapes was better for our post team. The VariCam served us well, and now we are finding the HDX900 to be an excellent camera as well. Quality is very important to us and the HDX900 cameras deliver quality cost-effectively — an important combination for all producers.”
When David Blum of Catalyst FX was hired by Bauer Martinez Studios as vfx supervisor on the upcoming Warner Bros. thriller, The Flock, he recruited Product Factory’s George Rizkallah to develop a customized 2K pipeline to enable the team to do a final conform using Apple’s Final Cut Pro (FCP). The pipeline employed four AJA KONA 3 cards running on Apple Mac Pro systems on an XSAN network with 26 terabytes of storage, connected via 2-Gig fibre.

The Flock, starring Richard Gere and Claire Danes, is the first major film finished in 2K, DPX, 4:4:4 log color space using FCP, and both Blum and Rizkallah credit the workflow’s success to the AJA KONA 3 card.

“Because of the way our vfx shots were created—many multi-layer timeline effects on over 800 shots—the only way to complete the film on time and budget was to do the final conform in Final Cut,” said Blum. “The AJA KONA 3 was the perfect solution.”

With the offline FCP sequence too complex for vfx and editing to be replicated within the production company’s timetable, Rizkallah customized a pipeline using CInema Tools with original software to create pull lists for scanning, setting the handles of the scan to match the Media Manager handles set in FCP to the KONA 3 2K setting.

“We chose the KONA 3 card because with a 2K conform in Final Cut, you’re working with huge file sizes and amounts of data,” said Rizkallah, DI Supervisor for The Flock. “Only AJA can handle files of these sizes.”

Using AJA’s DPX-to-QuickTime Translator, sequential DPX files were wrapped as QuickTime files for proofing and rendering, then converted back into sequential DPX frames, and delivered to Warner Bros. for color correction on a Filmlight Baselight system.

Catalyst FX is a vfx and post production company based in Phoenix, AZ, and Los Angeles, CA (www.catalystfx.com). Product Factory is a vfx and post production company located in Los Angeles, CA (818-788-7445).

Jennifer Wolfe is a publicist working with Raz Public relations, www.razpr.com, a PR firm servicing creative companies and technology developers in digital video, visual effects, post production, design and advertising.
At the 30,000 sq. ft. Phillips de Pury gallery in New York, a gorgeous whirl of sound enveloped those viewing the VOOM Portraits by Robert Wilson. Sound plays a huge part in the exhibition, and the blend, the whir, the mix of music to murmurs, Ethel Merman to Tom Waits, monologues to rhymes, underscore the fantastic, dreamy, other-worldly videos of the very famous, the very beautiful, and the very funny.

Robert Wilson, one of the most exciting and influential innovators in theater, art and design, has been working with us at VOOM HD Networks as Artist-in-Residence since 2004 to create the VOOM Portraits. VOOM, owned by Rainbow Media and Cablevision, is a pioneer of high definition entertainment, with 15 channels in the U.S. and a fast-growing global presence. We commissioned Wilson to explore the creative frontiers of the HD medium, culminating in 36 highdef productions so far, with the project ongoing.

Familiar with his work since childhood, I knew Wilson would showcase HD by combining art and technology in ways we couldn’t imagine. We chose to do celebrity portraits, as they lend a naturally larger-than-life presence, and HD allows life-size TV for the first time. Wilson - a master at stretching creative boundaries - interweaves playful references to theater, opera, music and painting, to create an artful experience intimating what the future of television and home theater can be. And that was our goal.

Wilson developed each portrait in collaboration with his subjects, including Brad Pitt, Winona Ryder, Johnny Depp, Monaco’s Princess Caroline of Hanover, Robert Downey Jr., Isabelle Huppert, Isabella Rossellini, Alan Cumming, Willem Dafoe, Dita von Teese, and others.

Shown first in galleries on each coast, the project is a groundbreaking venture that merges art with television. Reviewed in The New York Times by Jonathan Kalb, (Jan.30, 2007), the writer singled out Wilson’s “stunningly beautiful video of Winona Ryder,” which he states is “…to be considered one of his most penetrating theatrical creations.” At 17 ft. x 31 ft., it is the largest video projection of any of the portraits and was on exhibit in a joint show at the Paula Cooper Gallery.

Most of the portraits are on 42” and 65” monitors. We decided to project Winona Ryder at such a dramatic size because her portrait is the most story-based, as the character Winnie from the play “Happy Days” by Samuel Beckett. The native resolution of 1920 x 1080 is fine enough that it still holds up at this size.

We used the advanced tools of HD, such as color correction as we were shooting, on the fly. Each piece had about a week of post-production, where we adjusted motion and contours and created even more vibrant colors. This is seen most fully in the Isabella Rossellini portrait, based on Japanese manga, where we added many childlike facial expressions and sounds to the usually elegant and composed actress.

The video portraits run in seamless infinite loops, and are shot in horizontal format for television and cinema, and vertically for gallery presentation on HD plasma flat-screen monitors. The resulting images appear to be still photographs. On closer inspection, they reveal Wilson’s signature language of minimalist movement. In yet a new medium, Robert Wilson displays his unparalleled ability to change the way we see.

With its next stop at the ACE Gallery in Los Angeles, the show will tour internationally prior to broadcast of the portraits, planned for Fall 2007 on VOOM’s art channel, Gallery HD. HD

Ali Hossaini is executive producer of the VOOM Portraits, and of VOOM HD Networks’ travel and culture channel, Equator HD. He has worked with Robert Wilson since 2004 on each portrait in the ongoing series. See www.VOOM.com.
Among predators and prey in nature, harsh, relentless battles are fought each day. Two vastly different National Geographic Channel specials take a high-definition journey to capture nature up close at its most primitive and instinctual.

A Man Among Wolves presents the unique story of Shaun Ellis, a man who has given up everything to take a daring and unorthodox approach to understanding wolves’ every move — raising a pack of wolves in captivity by living with them ... as a wolf, teaching them by example how to survive in the wild. In this one-hour special, Shaun immerses himself in a pack after a captive wolf abandons her litter of pups, living and behaving like them, howling and licking, even eating carcass meat like them.

The program follows every step of the wolf pups’ incredible upbringing — from their first howling lesson and eating meat from Shaun’s mouth to their growing independence and aggression during mealtimes, eventually even forcing Shaun to accept a more submissive role in the pack.

A Man Among Wolves producer Bernard Walton used the Panasonic Varicam to virtually “overcrank” some of the shots to give the show more of a real film look. “HD was surprisingly good and gave us the quality we really needed. It stood up well in all kinds of lighting conditions — from rain to sun — and behaved like them, howling and licking, even eating carcass meat like them.”
"shine," he said. "Although we were only limited to 60 fps, it was the right speed to get the slow motion we needed for this program. The facial behavior of both Shaun and the wolves was much clearer, such as the howling, the snarling at mealtime and the growling. The details of the wolves’ features, such as the hair and fur, were incredible," said Walton.

Planet Carnivore goes deep inside the lives of super-predators. The first two episodes focused on an African lioness and a great white shark. The last two include: Planet Carnivore: Polar Bears featuring an arctic polar bear, “Binne,” and Planet Carnivore: King Bear, with an Alaskan brown bear, “Custa.” Narrated by Alec Baldwin, Planet Carnivore divulges Binne’s and Custa’s dramatic stories and their gripping daily struggle for survival.

Through raw and riveting footage, stark imagery and compelling drama, audiences will learn how each carnivore’s biological imperative shapes the lives of the other creatures that share their domain. What would their ecosystem be without them? And what are their daily struggles for survival in the battlefield of life as they know it?

Series producer Sue Houghton said that viewers will see details on the predators in HD that they wouldn’t see if the production team had used standard-definition cameras. "HD sharpens up the images and captures subtleties. In the first two episodes, with HD it’s possible to see expression in the lions’ golden eyes and drops of saliva from their jaws. Underwater, HD enables images to ‘clean up,’ and it enhances the shark’s rough skin, as well as the movement of its gills -- all in beautiful, deep-blue water.” She continued, “For the last two episodes, HD allowed us to capture stunning images of polar bears and the arctic foxes in the arctic, and in Katmai, Alaska, HD enabled the team to clearly distinguish between different bears in a way that standard def could not.”

With HD showing the predator battles up close, Houghton has some words of advice: “Check out the teeth!”

Photo by Andy B. Casagrande IV © Andy B. Casagrande IV

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When I first started in the Non Linear Editing (NLE) world, the head of production at Sony asked me why we couldn’t reduce digitizing time and cut cost. As a result of technology advances, we developed a workflow that could save a production thousands of dollars.

An HD/SDI signal contains many different forms of information beyond video and audio. Time code (RP188) is embedded into the signal and AJA has created software that allows us to rip this information from the embedded signal produced from the camera or deck and bring it into a format that can be used. This simple step forward allows us to now capture to an NLE directly from a camera or deck with one cable. We turn on the character generator, place a time code window in the lower left corner and then take the HD/SDI monitor signal off of the deck into our capturing station.

Instead of taking your master tapes to a post house to be converted to a file or down conversion, you cross convert and digitize to the NLE on set. The signal that we digitize is not full bandwidth so it can be easily stored and cut. For Final Cut Pro, we use the DVCPro HD codec, at 23.98 FPS which equates to 5.8 MB per second and allows for real time, multi-stream editing.

In my figures, if you have 15 hours of material to digitize, you can save as much as $3000 and a lot of time in the process. Another advantage is saving wear and tear on the master tapes. By using this new work flow, the only time you are going to use the camera master tapes is at the conform stage, where the project is sent over to the online room via email, opened and re-captured at full resolution from the master tapes.

With a well-organized team and creative thinking you can reduce your post house expenses and still end up with a quality product that can air nationally.

A Better Workflow

Lowell Kay is the founder and president of Hollywood’s top post-production and motion picture film servicing company, The DR Group. www.thedrgroup.com 323-960-1781

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Remember the day when it was predicted the majority of commercials would be produced in HD? Well, it’s almost here. A strong barometer for that goal is the daddy of all commercial arenas – the Super Bowl. According to Fletcher Chicago’s annual Super Bowl analysis, 83% of the commercials airing in the 2007 Super Bowl were finished in HD. That represents nearly a 60% increase since 2005. We can only assume that an increase in HD acquisition isn’t far behind. For those who boarded the HD bandwagon ten years ago, it’s been a long time coming but with consumer demand up, electronic prices dropping and professional camera manufacturers continuing to evolve equipment, the line is beginning to blur between film and digital acquisition.

Case in point, commercial agency Element 79 who took the leap of faith shooting their first HD commercial This is History – a spot for Frito-Lay scheduled to air during the Super Bowl. And what a leap. Only days before the big game, Element 79 CCO Dennis Ryan, GCD Phil Gant and Director Scott Smith were commissioned for the spot. Calling upon the talents of international commercial production company STORY and DP Pete Biagi, the Chicago agency produced and debuted the spot in a remarkable four-day turn-around.

Having shot numerous features in 35mm and HD (including Robert Altman’s The Company and most recently Prairie Home Companion), Biagi had the credentials and expertise to achieve the impossible. This is History, is an emotional tribute to the achievements of African-American coaches Tony Dungy and Lovie Smith and focuses on people at different locations watching and reacting to the game. Director Scott Smith wanted a look that conveyed strong emotion and a sense of realism especially from a lighting standpoint. “Because of the quick turn-around, we had only one opportunity to get it right,” says Biagi. His camera of choice was the ARRIFLEX D-20, which he tested at Fletcher. The D-20 is ARRI’s answer to a modern film-style digital camera. It acts like a film camera but records with immediate digital acquisition. Featuring an optical viewfinder and full frame 35mm CMOS imager, the D-20 provides the same depth of field as a 35mm film camera – a key factor in awakening the attention of the advertising world.

“Image focus is vital in commercials and the D-20 performed wonderfully,” continues Biagi, “It felt just like shooting with a 35, meaning that it was more about the image and less about the technology. It gave me a whole new palette vs. the usual hyper real quality of HD.”

ARRI CSC, envisions the D-20 as the “it” camera for commercial production and backs that with a vast team of national and international representation including ARRI CSC of New York and Florida, Clairmont Camera in LA and Canada, Fletcher Chicago in the Midwest, ARRI Rental in Germany and ARRI Media of the UK. According to Tom Fletcher, VP of Fletcher Chicago, who supplied the gear for This is History, “We always have our eye out for the next professional digital camera and feel that the D-20 fits that bill. ARRI has long been a respected name in motion picture capture and this is the high-end camera with the image quality that the industry has been asking for.” In fact, barely before the ink was dry on the agreement with ARRI CSC naming them the Midwest rep, Fletcher was filling another order for STORY – a green screen spot for Midwest Airlines with Gary Katz as cinematographer. The postproduction industry has also taken note of the D-20. Craig Leffel, Senior Colorist and Partner of Optimus, who color-corrected
Fletcher’s camera test, explains, “I’m impressed with the D-20 because the 4:4:4 image capture and inherent resolution allow me the flexibility to move the image around more like a film curve rather than that of videotape. There is a tremendous range in the blacks and whites giving the image a real photographic feel. I can stretch and bend the images at will. It responds very much like 35mm motion picture film, without the hard clipping or shortened grey scale you would associate with tape-based work. I’m excited to experiment with the Log capture aspects of the D-20 and working alternately in a file-based environment as well. By providing Linear or Log capture options,” he adds, “this camera is incredibly flexible.”

All in all, it’s a good time for cinematographers, especially for those who have weathered the digital storm. The technology is catching up to the demands of the craft and delivering cameras that look and feel like a 35mm and that have an imaging chip the same size as the 35mm negative. This, according to Biagi, is the advancement for which hard-line DPs have been waiting. Next on the list is the development of a hard drive and with the rate at which commercial production is currently embracing HD – rest assured, that’s just around the corner.

Fletcher Chicago is a full-service HD, film and video sales and rental facility specializing in quality equipment for the broadcast, commercial, feature, indie and new media production industries. For more information please contact Tom Fletcher at 312.932.2700 or tom@fletch.com.
In my 11 years as an executive producer at Discovery, I’ve overseen hundreds of hours of natural history programming. But Discovery’s latest tour-de-force, Planet Earth, is like nothing I’ve ever been a part of before. It all began five years ago when the BBC’s Natural History Unit set out to chronicle animal life on earth – after our very successful joint venture Blue Planet. The combination of talented, experienced filmmakers and some incredible technological innovations provided the magic that make it a landmark series.

One of the new innovations is the Cineflex Heligimble, a stabilization system that uses an extremely powerful camera lens attached to a helicopter. This device allowed the filmmakers to capture distant animals and behaviors up close without disturbing them. A wolf hunt, the Serengeti migration, the strategy of hunting dogs - all seen from a unique and privileged vantage point. This system also helped the filmmakers capture tropical storms from the air for the first time.

Other HD camera technologies include ultra-high speed cameras that slow down movement 40 times to capture rare animal predation, such as great white sharks leaping out of the water to prey on seals, and crocodiles grabbing wildebeest. HD’s light sensitivity also allowed the filmmakers to capture spectacular displays of deep sea bioluminescence of vampire squid and courting rituals of several species of Birds of Paradise on the rainforest floor. New camera tracking systems were developed, including one that carries a camera smoothly up over 100 meters to the top of the tallest tree in a single, seamless shot.

And if cameras under the depths of the sea and tops of the trees weren’t enough,
As seen on *Planet Earth*, Angel Falls located in Venezuela, is the world’s highest waterfall.

Awe-inspiring, beautiful images from space will provide viewers with a true appreciation for some of *Planet Earth*s most dramatic features, like the scale of the Himalayas and the extent of the Amazon River.

Presenting animal life like never before included the use of sophisticated time-lapse photography. A deep sea, time-lapse camera was specially housed to survive the enormous pressures two miles down an abyss and was operated remotely from a submersible to capture how the carcass of a dead whale was quickly consumed by a weird range of deep sea scavengers. Also used was a computerized time-lapse system that ran for many months to display the changing seasons around the world, as well as sequences of aurora australis, sand storms in the Sahara, cherry blossoms blooming in Japan, the fall in the U.S. and the floods coming to the Okavango Swamps.

Viewers will see places they’ve never seen before, including the 1,300 foot deep Cave of the Swallows in Mexico; the Gobi Desert in the middle of winter, covered in snow; the remote Arctic island of Kong Karl Land; the depths of Lake Malawi in Africa; Pakistan’s Karakoram mountain range, which has more of the world’s highest peaks than anywhere else on the planet; and the first high-quality aerial sequences of Mount Everest.

*Planet Earth* is one of those rare series that marries the most sophisticated and innovative film methods and technologies with the grace, wonder and classic appeal of the very best nature documentaries of our time. And being filmed and presented in HD, *Planet Earth* is truly natural history for the 21st century.

*Planet Earth* was created by the team behind the award-winning natural history series *Blue Planet* and was produced for Discovery by the BBC. Award-winning actress and conservationist Sigourney Weaver is the series’ narrator.

*Planet Earth* will air on consecutive Sundays from March 25 through April 22, 2007. Following each episode, viewers will also be able to see exclusive behind-the-scenes footage of exactly how the filmmakers secured the series’ most memorable images.
Ribbon of Sand premiers in March at the Smithsonian Museum of Natural History in HD in the 560-seat Baird Auditorium. The environmental film will open later this spring in a new HD surround-sound theater at the Harkers Island Visitor Center at Cape Lookout National Seashore, a chain of barrier islands off the North Carolina coast. The 30-minute film paints a vivid portrait of a unique ecosystem. The preserve consists of several undeveloped sand barrier islands that extend 56 miles from Ocracoke Inlet to Beaufort Inlet, part of the famed Outer Banks. The film was written, produced and directed by John Grabowska, a filmmaker at the Interpretive Design Center of the National Park Service in Harpers Ferry, West Virginia.

Grabowska traces the idea for Ribbon of Sand to conversations that he had with park superintendent Bob Vogel in 2002. They agreed in early discussions that the documentary should focus on the entire coastal ecosystem rather than on the islands alone. “A lot of shorebirds and wading birds inhabit it year round, and it is a tremendously important wildlife area for migratory birds which stop there to feed on their way from South America to the Arctic,” Grabowska says. Production began in November 2004 with multiple visits to the locations. Grabowska and his long-time collaborator, cinematographer Steve Ruth, were the camera crew for land and aerial shots. Michael Male provided footage of underwater estuarine species, and deep ocean footage of cold water corals was shot on HDCAM by Art Howard from a NOAA submersible. “I have produced several historical documentaries,” he says. “But for me, natural history is a greater challenge because there is no inherent story, no built-in narrative. The pioneering environmentalist Rachel Carson was a master at translating hard science into poetic language. Her book The Edge of the Sea was our main inspiration for making a film that connects humankind to the natural world.” Grabowska says that he shoots nature films in Super 16 format because film has the latitude needed to record organic images of nature with nuanced colors and contrast. It is also an archival medium that will endure for future generations, particularly important for barrier islands undergoing collapse due to global warming. The developed portions of the Outer Banks are on the verge of breaking apart because of rapidly-rising sea levels, so Grabowska felt capturing the images on an archival medium was particularly important. Their basic tools were an Aaton XTR camera on land and an ARRI SR camera for aerial shots. They began shooting the documentary on Eastman EXR 50D film and switched to Kodak VISION2 50D 7201 film when the newer stock became available. Both negatives have recommended exposure indexes of 50 in daylight. “The new 7201 film recorded gorgeous pictures,” Grabowska says.

Grabowska shot some 20 hours of film in all. Colorlab, outside of Washington, D.C., processed the negative. Bob Johanson at NFL Films in Mt. Laurel, New Jersey, telecined the film to HDCAM format. Post-production was done at Herninger Media Services in Arlington, Virginia. Grabowska timed the finished film with colorist Dave Markun in HDCAM SR format. Academy Award-winner Todd Boekelheide composed and recorded original music at Fantasy Studios in Berkeley, California. Grabowska himself narrates, interspersed with quotes from Rachel Carson’s writings recorded by Meryl Streep at Magno Sound in New York.

Ribbon of Sand is encoded on a hard drive for HD projection. Grabowska concludes, “With HDCAM SR there is finally a high-quality HD format with enough audio channels for our types of films. We filled all 12 channels with 5.1 surround, Dolby E, stereo and an international mix.”

Ribbon of Sand: A portrait of Vanishing Islands by Bob Fisher

DP Steve Ruth takes a light reading before shooting a scene for Ribbon of Sand on Portsmouth Island.
HD Farm Shoot

Logistics

by Doug Hastings

Shooting highdef TV spots in the lush farm fields that dot the Midwest proved to be as beautiful and interesting as one would expect. But the timed-to-the-minute schedule and complicated logistics turned the shoot into a twist on the movie Planes, Trains and Automobiles.1

Technisonic Studios of St. Louis, Missouri was contracted to shoot TV spots and print materials for Monsanto last summer across the U.S. corn belt. The Technisonic crew moved from location to location via a Piper Navajo, with a Bell Helicopter in tow, and a small production van driving throughout the night. The crew of five included two crane grips, a director of photography, a chief engineer, and an audio engineer. They also worked with a still photographer and representatives from Monsanto’s marketing agency, Osborn & Barr Communications.

Shot with a Sony HDW-F900R CineAlta camera and a CamMate crane system, the project required B-Roll shots on the ground with both real farmers and an actor, as well as aerials to show crops and farm fields. A shooting day was from sunrise to sunset, with a mix of crop, equipment, grower interviews, and spokesperson shooting.

Each location required the use of a Jet Ranger helicopter for aerials, and a camera crane and ATV for ground shots. When the HD crew finished their aerials, the still photographer jumped on; when one crew was done with the ATV, the other would hop on.

This completed one of many projects in a long line of work Technisonic has done for Monsanto through Osborn & Barr. Other agricultural work includes spots for Roundup Weathermax, Roundup Ultramax, Dekalb, America’s Soybean Farmers, Beltwide Cotton Genetics and Delta King seeds.

Doug Hastings of Technisonic served as Director of Photography on this shoot. For more information on Technisonic, visit www.technisonic.com.
A Look at the F-900R

You will see an increase in the use of F-900R cameras as there are some obvious advantages over the F-900. Other improvements may be less apparent but are extremely helpful. Let’s run down a few features you need to know about.

The camera is stronger, smaller, lighter, with more features built in that were external accessories on the previous model. It has improved contrast, extended gamma features, colorimetry, sharpness and stability just to get started. The 900R also has dual HDSDI outputs built in along with a wireless audio receiver and more efficient power consumption.

In addition to improved picture quality, there are some very handy optional features:

1) Optional HKDW-703 picture cache board for stop motion, time lapse and 8 second loop recording.
2) Optional HKDW-702 downconverter board for downconverted SD output from the camera when shooting 1080 59.94i and 60i.
3) Optional HKDW-902R 2-3 pulldown converter board for downconverted SD output from the camera when shooting 1080 23.98.
4) Optional HKDW-905R board for a slow or open shutter capable of long exposures of as long as 2 seconds per frame. This board also has image inversion great for lens adaptors or shooting 3D so the reflected eye can be flipped back and monitored and recorded correctly in the field.

If you have shot with the F-900, the F-900R has so many more differences, you will need to get checked out on this camera system to maximize its functions and capabilities. The gamma has greater control with custom curves built in, and greater control of lens file settings to make up for differences in lens quality.

Another tip: The memory sticks from the F-900 won’t work in F-900R cameras because the menus are too different. So you gotta dial everything in the old fashioned way.

All Formats
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Contact: Tom D’Angelo
221 W 26th St.
New York, NY 10001
(p) 212.727.1234
(f) 212.255.6644
I’ve been shooting HD for close to a year on the HGTV series Cash in the Attic after working solely within the Beta and Digi-Beta formats on pop culture shows for VH1 such as I Love the 70’s and 90’s and Can’t Get A Date, as well as shows for Food Network, Style Network, and MTV. Cash in the Attic takes a family in need of a home improvement project and shows them how to raise the money by taking their unwanted and unused household stuff to auction. This was my first HD project. I was concerned that I would have to slow down the pace of shooting because I thought HD would take longer to set-up lighting and would be less accommodating to the fast paced style of directing that Cash requires. I thought we’d have to set up shots more deliberately, or wait while technical glitches were fixed. I like to keep things fresh and moving while I shoot, and I was hoping I wouldn’t have to adjust my directing style to suit this new technology.

Cash has no set or soundstage to keep things unified visually. Every show is shot in a different location, mainly people’s homes, that are badly lit or visually challenging. Everything is in flux: the homeowners and locations on each episode are different; and we often travel to other states outside our base in New York. I was worried that HD would hamper what is already a complicated process.

Luckily, the transition from shooting in Beta to HD has been very smooth. The basic pre-shoot set-up doesn’t take any longer than with Beta and we’ve been able to shoot and follow the action without interruption. Cash is fast paced, and most of it is shot using hand held cameras because we want the show to be as real as possible. Everything is on-the-go, real and immediate, and HD fits in perfectly with this.

As a director I have found that I need to pay close attention to the background, lighting, make-up, and wardrobe of my hosts and contributors as HD is less forgiving to flaws and blemishes. Although these are important for a good looking, cleanly produced show, I’m also interested in getting a good vibe on camera. In the future, I’d like to see more affordable wireless HD monitors to watch the action as it unfolds on set.

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HD by Greg Altman

Producing in HD

Where do you want to go with your content?

Everybody who’s anybody in Production/Post — or would like to be — will make tracks to NAB2007.
On one of the walls in the Hitachi booth at CES in Las Vegas, showed a prototype LED backlit LCD TV with “High Color-reproduction” in juxtaposition to the same 32-inch LCD with a conventional backlight unit.

xYCC color space standard defines colors by means of an algorithm that can specify any color in nature. To my surprise, the company would not quote a percent of the NTSC color gamut (like many others do) but rather stated that Hitachi was waiting for broadcasters to define a new color standard to catch up to the displays ability given the new illumination technologies.

In contrast to the Hitachi stance, Sony (both CE manufacturer and broadcast equipment maker) is aggressively embracing the newly adopted color standard it co-developed with Mitsubishi, and was adopted last January (2006) by the International Electrotechnical Commission (IEC61966-2-4). The standard describes “xYCC color,” (shorthand for Extended YCC Colorimetry for Video Applications) that purportedly covers the entire gamut of the human visible spectrum. Everything your eye can see in the natural world will be shown in this color space. According to the group, this is around 1.8 times the color space that can be defined as mixtures of red, green and blue. Silicon Image (SI) has likewise embraced the multimedia standard in its latest HDMI 1.3 spec. One of the options includes support for the xYCC color space stating, “x.YCC lets HDTVs display colors more accurately, enabling displays with more natural, vivid colors.” This is not to be confused with SI’s “deep color” that lets HDTVs and other displays go from millions of colors to billions of colors, (from traditional 8 bits to 16 bits) empowering what SI calls, “unprecedented vividness and accuracy of color on their displays.” The company claims “deep color” “eliminates on-screen color banding, for smooth tonal transitions and subtle gradations between colors” not to mention increased contrast ratio according to the company.

Deep color increases the number of available colors within the boundaries defined by the RGB or YCbCr color space, while xYCC expands the available range (limits) to allow the display of colors that meet and exceed what human eyes can recognize, according to HDMI.org.

Sony and Mitsubishi co-developed this new xYCC standard, but Sony will simplify their message as it goes to consumers by calling the new color space x.v. Color. Not only did Sony introduce TVs at CES that can support this color space, but it announced new camcorders that can acquire content in x.v. Color as well.

So with the march of progress and the end of NTSC analog broadcast on the horizon in 2009, it looks as if we are losing an industry reference as x.v.Color and “deep color” sound the death knell for the US centric “NTSC color gamut.” Looks like we’ll have to find some other way to rankle the “Colour Engineers” over at the BBC who never liked the parochial reference in the first place.
A cinematographer must artistically capture the mood of each and every scene for the perfect cinematic experience. As the Cinematographer of the FOX hit show “24”, Rodney Charters, ASC, CSC demands a lot from his cinematography tools, and recognizes a high quality professional cinematography tool when he sees one.

Rodney recommends the lightweight, shoulder style GY-HD110U because of its interchangeable manual lenses, perfectly positioned manual controls, and the ability to shoot 24p. The camera’s compact size and HD focus assist makes shooting in confined spaces effortless, which is essential for shooting drama.

The GY-HD110U captures true native 24p to produce polished, high quality HD recordings that provide the ultimate cinematic experience.

“Wonderful. Amazing. Congratulations, JVC.”
– Rodney Charters, ASC, CSC
Cinematographer for “24”
DP for “Roswell”, “Sounder”, “Blind Faith” and “Sleepwalkers”

For information on our award-winning ProHD lineup and to empower your creative vision, call 1-800-582-5825 or visit www.jvc.com/pro.