

HIGHWAY

BROADCAST LIVE SPECIAL ISSUE

www.jvcproeurope.com



Page 2:
World Cup Exclusive



Page 8:
Wildlife on 101



Page 10:
Dynamic Display System



Page 11:
HDV Editing with I-frames

Introducing ProHD 200 Series with 50 frames progressive recording (720p/50)

JVC continues to bring affordable, high quality, highly professional HD products to market. ProHD's existing 100 Series camcorders will, later this year, be joined by the 200 Series, which was first revealed in USA at NAB 2006 and again, in Europe, at Broadcast LIVE show in London in June 2006.

Both the 100 Series and 200 Series share the same proven camera body and bayonet lens mount.

The distinguishing feature of the 200 Series ProHD camcorders is the new, ultra-efficient super-encoder which provides 50 frames per second progressive recording (720p/50), yet still at the identical 19.7 Mbps bit-rate as the 100 Series.

At the top of the 200 series range is model GY-HD250, which notches up a 'first' in that it is the first ever HDV camcorder to offer true studio set-up by way of the specially designed studio adaptor KA-HD250.

However, the camcorder unit itself has many new and seriously professional features. The outputs, now on BNC connectors, include HD SDI with embedded audio (unique amongst all current HDV camcorders), time code sync and genlock. The

GY-HD250 is sure to be popular with users being attracted by its versatility of being both ENG and studio capable.

The easy-to-mount Studio Adaptor means the same ENG camcorder can play a second, temporary or permanent role. Therefore, not only is ProHD product affordable in itself, but it can also keep down the overall initial investment in HD, which is essential for any company or person crossing the bridge from SD to HD.

The Studio Adaptor has 26 pin multi-core connection and an accompanying 16:9 LCD studio viewfinder option.

Also in the 200 Series is ProHD mid-range camcorder GY-HD200 which, besides 720p/50 recording, has certain new features which lend themselves to digital cinematography, such as Enhanced Cinema Gamma and, in support of film adapters such as from Red Rock Micro, the facility to flip the viewfinder image vertically. Also of great interest to cinematographers will be the new HZ-CA13 lens mount adaptor which allows use of existing 16mm PL (positive lock) prime and zoom lenses.



GY-HD250 camera rear



GY-HD250 camcorder fitted to the prototype studio adaptor, KA-HD250.

No.	Type	Connector Name
(1)	BNC	GENLOCK / AUX IN
(2)	BNC	HD SDI / SD SDI
(3)	BNC	Y
(4)	BNC	PB / TC IN
(5)	BNC	PR / TC OUT
(6)	Round 6-pin	REMOTE
(7)	RCA	AUDIO OUT - CH1
(8)	RCA	AUDIO OUT - CH2
(9)	RCA	VIDEO
(10)	IEEE1394 6-pin	IEEE1394
(11)	XLR 4-pin	DC INPUT

The 200 series will be available after the IBC show in Amsterdam, when full specifications and prices will be announced.

From the Editor



Transition Management in the SD to HD revolution

Not a revolution in the sense of fighting at the barricades, more the inexorable force of a steadily revolving wheel, driven by the gathering, combined momentum of digital forces and of the human desire to have video footage with a viewable sharpness and clarity that broadcast TV has denied us over the decades.

During this year the two new types of 120mm optical disc, called Blu-Ray and HD DVD, will show us, in our homes, the high definition quality which we will then also want to see from broadcast television. Time was when VHS tape and broadcast TV were both delivering the same miserable 200 TVL of interlaced moving pictures - but we did not complain, because it all seemed rather clever and wonderful, and we had known nothing better in our homes.

So when and how did this revolution start, this revolution that is bringing about our need for transition management? The beginning stages were the gradual shift from analogue video recording to digital. Around the same time

domestic TV sets were going from 4:3 to 16:9 aspect ratio, albeit still displaying mainly 4:3 footage and always in standard definition. The push in UK broadcast TV production was for 16:9. Now, in terms of domestic TV we are seeing the start of a commercial & governmental push to get HD Ready* sets into UK homes.

On the broadcasting front, HD in Europe is available but limited, yet things are now starting to change on an almost weekly basis. The FIFA World Cup has acted as an extra spur and Sky already started its High Definition satellite TV service in May, and the BBC is providing HD broadcasts of World Cup games through Sky's HD service. Soon to start and run throughout 2006 are the two hours per day of consumer HD trials shared by the BBC, ITV and Channels 4 & 5. HD broadcasting is rapidly becoming a reality.**

The theory of video production today is that you do it in a way to allow yourself two bites at the cherry. You produce your master in HD for SD transmission today, and again tomorrow for HD transmission. Easier said than done, given that production suites today are far from fully HD equipped.

One guiding star which helps us enormously is our belief that the BBC's policy is that by 2010 all non-field productions will be originated and mastered from start to finish in progressive 1080p. Fine. That means that we all know where we are headed, and it puts a useful time-frame on the whole saga.

So, whatever we do now, in light of this policy, is transitional towards the goal of 1080 progressive. The question therefore is how to manage the change. Although a relatively fast transition, its duration is nonetheless to be measured in years. The BBC and other broadcasters will still be accepting other forms of HD for field productions and ENG, such as progressive 720p and interlaced 1080i, for a few years after the 2010 deadline. Similarly today many HD camcorder owners continue to shoot mainly in SD, owing to HD not yet being an absolute requirement. Also, HD equipment in production companies & facilities houses is not yet that widespread.

Over the next few years therefore, the name of the unavoidable game is management of the transition from standard to high definition. Managing budgets for new equipment that can do both SD and HD, managing the costs of HD production, looking at the future saleability of SD-only productions and waiting for the right moment to invest.

The beauty of JVC's current product offering is that it can be seen for what it is, namely a solid transitional package that will go some considerable way towards future-proofing today's productions in light of the BBC's 2010 target.

The JVC professional range expands its highly affordable ProHD camcorder range and now offers full progressive 50p and 60p recording at HD 720, besides providing stunning 16:9 SD recording, and there's also a new studio

camera version of the same thing. Shown at Broadcast Live exhibition in London in June, these new ProHD models will get their full launch at IBC 2006.

JVC are rightly proud of another, similarly dual HD & SD product for these times of change, namely the new Edirol mixer, which beautifully and comfortably handles HD and SD, 16:9 and 4:3, mixing the two together, along with high resolution graphics and effects. It is another powerful tool for transition.

Please remember that you have access to JVC and to a network of their professional dealers. Call upon us for discussions & guidance and an open exchange of views on possible ways to manage your own transitional needs.

Do not fear the revolution, but rather acquire the right tools with which to welcome and embrace it.

** HD readiness has 3 elements – the device must (i) have a minimum resolution of 720 TV lines, ie 1280 x 720 display (ii) handle both 720p and 1080i signals (iii) support DVI or HDMI connectivity which must also offer HD Copy Protection (HDCP)*

*** For up-to-date status of HD broadcasting in UK, see www.hdtvuk.tv*

This magazine has been sent out to the current JVC mailing list. If you no longer wish to be on the list, please contact marketing@jvcpro.co.uk
E & OE

Editor
Nick Fletcher
nfletcher@jvcpro.co.uk

Consultant Editors
Tom Willatt
Kelly Ledgerwood
Dominic O'Byrne

Contributing Editors
Fergal Ringrose
John Schell
Nigel Cooper

Creative Editor
Graeme Boyd
info@graphicsworks.co.uk

Printer
Handsombe Biss & Associates
www.hbanda.co.uk

Publisher
JVC Professional Europe Limited
JVC House London NW2 7BA
+44 (0) 20 8208 6219
www.jvcproeurope.com

Want to know more about ProHD?



Visit JVC's special website area called Aspects of ProHD which is being constantly updated with the latest reviews & user stories, with new accessories from JVC & other parties and with useful explanations, FAQs and a glossary of terms.

www.jvcproeurope.com/prohd

Have you got your copy?



If you did not receive issue 1 or 2 of "Highway" then please contact JVC at info@jvcpro.co.uk or ring 020 8208 6231 to request your copy.

Over-the-moon JVC nabs World Cup exclusive

JVC's World Cup scoop is now revealed to Highway readers. Remember, you read it here first. But sadly JVC is not at liberty to give the full details of England's tactics to win the cup.

We can however tell you some other revelations. The tight-lipped, ashen-faced manager said that for him it was a great step-up from the London North Circular Relegation

League when he was the gaffer at Neasden Rovers, after quitting Dollis Hill United in torrid departure row.

The football supremo allowed himself a wry smile, when quizzed about England's World Cup chances. The maestro said England would be committed, like JVC, to being progressive. He quipped that England would stick to 442 and only use 720 after the first red card.



EBU backs emerging progressive standard



**Phil Laven, Director,
Technical Department, European Broadcasting Union**

Philip Laven is Technical Director of the EBU which he joined in 1997, direct from the BBC. Most of his work was in the R&D department, which he latterly controlled. As Controller of Engineering Policy from 1993 to 1997, he played a leading role in the BBC's policy on such weighty matters as the introduction of digital audio broadcasting and digital television. He is active in standardisation initiatives, which include being Chair of ETSI/EBU/CENELEC Joint Technical Committee, the body responsible for setting standards for broadcasting in Europe.

Thursday, 25 May 2006, London.

While to many the issue of an interlace versus a progressive-scan HDTV standard had taken on the entrenched fervour of a religious debate, EBU technical director Phil Laven said at last week's HD Masters conference in London that there is no need for a format war in Europe as all the HD-Ready sets are standards-agile, writes Richard Dean.

720p offers broadcasters better quality at the same rate

However Laven left no doubt about the EBU's preference at the packed HD Masters conference, organised by TVBEurope in partnership with BKSTS and SMPTE. "Tests have shown that viewers see little difference between uncompressed 720p and 1080i pictures, but prefer 720p on compressed signals," said Laven, pointing out that for the foreseeable future viewers

will never see uncompressed pictures at home. "So 720p offers broadcasters better quality at the same rate, or the same quality at a lower rate, perhaps making way for more channels.

"Interlace is an old but effective technique for bandwidth reduction dating back to the 1930s, but modern compression techniques are more efficient," added Laven, hammering the point home. "Although converting from progressively scanned footage into final interlaced broadcast is easy and accurate, converting in the opposite direction creates errors and approximations, so we believe that interlace should be avoided anywhere in the chain.

"The EBU position is that the emission standard should be progressive - 720p/50 now, and 1080p/50 in the longer term."

Heralding 1080p as the 'third generation HD standard' from which 720p and 1080i

formats can be easily derived if required, Laven conceded that the format consumes a mighty 3 Gbps of bandwidth at full quality. SMPTE is working on a new standard for both 1080p/50 and 1080p/60 in the US, with the likelihood of 1.5 Gbps 'mezzanine' compression variants for existing HD SDI infrastructure. "However it may surprise some of you," Laven told his hushed near-capacity audience, "to learn that stripped of the coding overhead associated with interlace, 1080p/50 actually needs a lower data rate than 1080i/50 to achieve the same subjective picture quality."

Far from closing down the religious divide on picture scan formats, Laven's claims seem likely to give the topic a whole new lease of life.



This article is reproduced with the permission of TVBEurope magazine and its TVB-E electronic newsletter.

Best value HD monitoring



IF-C51HSDG

JVC has set new package prices for the 17" HD monitor DT-V1710. The packages contain one or other of the two HD SDI input modules IF-C21HSDG and IF-C51HSDG. They represent a huge saving over the the combined list prices if you were to buy monitor and module separately.

Both modules have HD SDI in and out, with embedded audio and with auto-sensing to redirect an incoming SDI signal to an adjacent SDI input. IF-C51HSDG has the added feature of an on-screen display of bargraph audio level meters. The HD SDI input accepts all the following types of HD signal: 720 progressive at 24 Psf and 25, 30, 50 & 60 fps and 1080 interlaced at 50 & 60 fps.

JVC implements advanced form of HDV1, as part of their prospering ProHD concept of affordable, progressive HD

It is much less than a year since JVC sold their first ProHD camcorders. Global sales have topped 12,000 units as the sales momentum of ProHD continues to build. Users' acceptance of JVC's progressive implementation of the HDV™ standard will be further enhanced by the new 50 frames and 60 frames per second recording capability announced and shown at USA's NAB in April and again at the UK's Broadcast Live show in June, 2006.

It has been a fascinating year, as competitors brought out new offerings to fit in this transitional video world of SD and HD. For users of professional video equipment, it is also a very hard time indeed, for they are obliged to make some sense of it all, trying to get a handle on the timescale and on the financial implications, on the trends and on their own clients' future demands.

While even some leading industry figures continue to disagree on the best way forward, there is an even stronger case for the end user not to invest massive sums in equipment. Whilst we at JVC believe totally in progressive as the HD acquisition format, some of our users may be less convinced, since they are also closely listening to the words of other manufacturers who have chosen to progress towards the ultimate target of progressive 1080 by sticking with good old-fashioned interlaced for acquisition and display, even when all LCD & plasma screens and the new rear-pro big screens are all progressive, just as all computer display screens are too.

But, hey, that's life. There will always be a mix of views and opinions, of types and trends. The good news is that any uncertainty in the professional video market plays directly into the hands of JVC who have three huge plus-points on their side: (1) ProHD's affordability which means that HD equipment budgets need not be sky-high (2) ProHD equipment's professional look, feel and operation and (3) the sheer stunning picture quality of the HD images that ProHD creates.

Inexorably, technology moves forward and, already at NAB, JVC announced exciting HD recording developments which will be inside ProHD camcorders and with JVC dealers by this Autumn. 50 and 60 progressive frames per second recording at a native resolution of 1280 x 720 pixels, and all achieved within the original 'rulebook' specifications of the HDV format. That is a massive, truly massive achievement, which is all the more so, because the new 200 Series camcorders will be delivered with a similar level of affordability as the 100 Series.

Even the 100 Series does not stand still, and JVC is proud to offer a whole gamut of improvements in their models GY-HD110 and 111, superseding GY-HD100 and 101. Many of the enhancements are in fact drawn from a "top 10 wish list" from a global website where GY-HD100 users and would-be users were invited to suggest their most wanted additions and improvements.

It is very encouraging to know that not only did JVC listen to broadcast cameramen and other video professionals at the design stage of the ProHD camcorder, but also JVC continues to listen and to respond.

HDV and HDV logo are trademarks of Sony Corporation and Victor Company of Japan, Limited (JVC).

REVIEWS

All the reviews below can be read in full on the JVC website area Aspects of ProHD www.jvcproeurope.com/prohd

Videokamera Objectiv – 'David and Goliath'

This German review believes that the GY-DH100 is the camcorder for everyone – from prosumer users through to professionals. It gets tested up against the Sony and Panasonic offerings, and the conclusions are drawn that JVC has the best camcorder in its class and that it is affordable.



DV.COM

In this article, Adam Wilt reports on comparative tests carried out by Director Barry Green on 'Four Affordable HD camcorders', namely the GY-HD100, Canon's XL H1, Sony's HVR-Z1U and Panasonic's AG-HVX200. Also included in the tests are the top-end Panasonic HDC27F Varicam and Sony HDWF900/3 CineAlta. The GY-HD100 performs extremely well in these tests. "Everyone was agog with how well the JVC handles skin tones", exclaimed Adam. "If a winner were to be selected, based on how well a camera did in the tests compared to its (price-based) expected showing, the HD100 would certainly be that winner".



Online review from Film-TV-Video.

The GY-HD100 is described as a work of art on this German originated website, www.film-tv-video.de. The 12 page review goes in to great detail as it examines the camera. Praise is given for the top image quality and the professional design that makes it a favourite with professional cameramen.





***Want real
bayonet mount
lenses with all
the usual stops
and controls?***

***Get the
right tool
for the job!***

ProHD Camcorders

Standard with bayonet mount, plus a wide range of lenses and lens accessories

Lenses

- | | | |
|------------------|-----------|----------|
| ● 13 x 3.5 | Wide ENG | Fujinon |
| ● 16x (standard) | ENG | Fujinon |
| ● 17x | ENG | Fujinon* |
| ● 17x | Motorised | Fujinon* |
| ● 18x | ENG | Canon* |

*Coming later in 2006

Lens adapters & mount converters

- | | |
|--------------------------------|---------------|
| ● 2/3" Bayonet mount converter | JVC |
| ● 1/2" Bayonet mount converter | JVC |
| ● Mini 35 motion film adapter | P & S Technik |
| ● 16mm prime film lens adapter | JVC* |
| ● Nikon 35mm SLR lens adapter | Various |
| ● Wide angle 0.8x converter | JVC |

JVC

The Perfect Experience / —



If you want the right tool for the HD job, then call us on 020 8208 6204 or visit www.jvcproeurope.com

20:20 Vision

Hats off to the technical boffins at JVC for spotting potentially the best double act of the entire SD/HD revolution – the Edirol V-440HD Video & Graphics Mixer and JVC.

The transition from SD to HD is unlikely to be straightforward, as we've already seen. One simply can't ignore HD or SD 16:9, but neither can SD 4:3 simply be abandoned overnight. All these formats still have a strong role to play. The Edirol V-440HD is an efficient and uncompromising machine that bridges the formats, and will always render true HD output – **irrespective of the input.**

In addition to handling HD and SD video with equal ease, the Roland will also render high-resolution computer graphics.

In mechanical terms, this means you can now happily mix together your existing SD video footage with new 720p or 1080i HD material, bringing it all up to the higher level. Whatever the resolution of your computer graphics, from VGA to SXGA, the new mixer accepts them, ready for upconverting and rescaling, as required.

The V-440HD model name gives a strong clue as to its capabilities. It has 4 standard definition (SD) video inputs and 4 high definition (HD) video inputs, that also accept data graphics at SXGA resolution (1280 x 1024) right down to VGA (640 x 480).

The flexibility of this powerful and keenly-priced mixer is wide-ranging. Firstly, it extends to being selectable between 50Hz and 60Hz HD operation. Secondly it can accept SD video in either 4:3 or 16:9 aspect ratio. And thirdly it will upconvert and rescale SD into HD.

If this invaluable party trick weren't enough, additional features include picture-in-picture with joystick and size-dial to control position. Size, pan and zoom, plus lock facility, can also be used simultaneously with the keyer in the HD & graphics section. There is one keyer each for SD and HD. The built-in TBC and real-time upconverter and scaler all ensure totally smooth transitions.

"JVC simply had to secure distribution of the V-440HD in the EMEA territories for our customers' benefit," said Ian Scott, Sales Director UK & Export Operations. **"It makes perfect sense for JVC, with its powerful line-up of HDV 3-CCD camcorders and SD widescreen Hitachi studio cameras, to have such a powerful systems tool as the V-440HD which literally brings together the worlds of HD and SD video, with graphics thrown in."**



Two V-440HD mixers side-by-side providing a split-screen display

Jonathan Young has seen The Holy Grail, or so it seemed when he saw the GY-HD101



Jonathan Young at work in a poppy field in Afghanistan.

Professional cameraman Jonathan Young has been using JVC's GY-HD101 camcorder on both HD and SD shooting assignments over the last six months. These have taken him all over the world, often in war zones, as can be seen from some of the shots on his company website www.debrouillard.tv.

Jonathan spoke to JVC about why he feels the camcorder is 'The Holy Grail' for professional cameramen. When first learning about JVC's GY-HD101 camcorder, Jonathan was relieved that someone had created a camcorder that suited professional cameramen. "At last, a small DV camcorder

with features and performance normally only found on much larger broadcast cameras. I knew that as soon as I got my hands on an HD101, it would join my list of preferred cameras."

As a cameraman, Jonathan has no problem with miniDV or the revolution it has caused in TV recently. He does however feel that DV camcorders tend to be substandard in the eyes of his fellow cameramen who are used to operating professional cameras. "MiniDV has proven that it has a role to play within the broadcast world, as this format is now commonplace at any TV station or production company. One issue for professional cameramen using the miniDV cameras is that their provenance is in the consumer market not the professional one. We (professional cameramen) inevitably struggled to use them (MiniDV camcorders) professionally. We were used to operating professional ENG video and film cameras, with features designed by the people who were using them. Suddenly everything went out the window when these compact consumer-based camcorders hit the market".

In designing the new camcorder, JVC had asked professional cameramen around the world to state what they needed and wanted from a compact HD camcorder. This made the GY-HD10/101 a real breakthrough, as it was a compact, shoulder-mounting DV-based camcorder with a real bayonet mount lens, with end stops and made from glass & metal.

"The Holy Grail has been found. It's the GY-HD101 from JVC. Unlike other camcorders with fixed lenses, the JVC is supplied standard with a Fujinon detachable ENG lens which gives the cameraman great control. After previously struggling with an electronic approximation of focus on other DV cameras, I now had a lens that I could focus and, most importantly, be sure that what I was shooting stayed in focus. Using the JVC/Fujinon traditional style lens meant that the markings on the focus barrel were accurate in relation to what I was shooting at the time. Furthermore, having a real mechanical iris gave me great reassurance about the ability to measure and control exposure accurately."

REVIEWS

All the reviews below can be read in full on the JVC website area Aspects of ProHD www.jvcproeurope.com/prohd

Zerb Magazine

(The journal of the UK's Guild of Television Cameramen) Richard Collins, formally an engineer at the BBC, finds lots to like about JVC's implementation of 720 progressive HDV. "Fantastic value" he says.



HD Magazine

This French article begins with a brief overview and history of the HD camcorder market. "3 years ago JVC stunned the video world with the first high def camcorder (JY-HD10)" and then comments on the situation today... "JVC is again in the limelight. The camcorder's concept and design is directly inspired by high end video camcorders and traditional film cameras, so JVC can be proud to be different".



Millecanali Broadcast Magazine

Stefano Spiti took the GY-HD101E to Malaysia for 20 days to make three short films: two dedicated to the new MV Agusta motorbikes and one ordered by the Malaysian Tourist Office based in Italy. Mr Spiti concludes his article by highly recommending the GY-HD101 as ideal for making short films in HD.



Produccion Profesional - Spanish Magazine Nacho del Pozo, Editor-in-Chief of PRODUCCION PROFESIONAL, looks into the background of the



HDV format, JVC's concept of ProHD and the benefits of the GY-HD100 camcorder, emphasising the advantages of interchangeable lenses and of the 24p capability.

Focus Magazine

(The journal of the UK's Institute of Videography) In this second article Jim Panks compares the GY-HD100E with a competing model of HDV camcorder, giving his impressions on (a) progressive versus interlaced formats, (b) the future of HD and (c) how the BR-HD50E recorder/player makes an ideal companion to JVC's ProHD camcorders.



The Secret is getting the right tool for the job

Mark Charles writes about the choices he made when creating his first feature film



Liz Smith composes the next take

When I was in pre-production on the film, *The Secret Philosophy* (www.arturofilms.com), I thought about a number of camera options with Producer Rafael Cortes and DOP Liz Smith to use for the film. A versatile camera was needed, as the film uses a mixture of documentary footage and film to tell its story of the aftermath of the terror attacks on London in July 2005 and, a quest for a missing writer amidst rumours of a secret philosophy.

The film had numerous outside location shoots that were taken at rallies, debates, and festivals, therefore we needed a camera that would allow us manoeuvrability without sacrificing image quality. When we tried

the GY-HD101 we were very impressed with its image quality, even when viewed in comparison with footage we had taken using HDCAM. It really is a beautifully designed camera and an ENG operator's dream in the way it balances on the shoulder, especially with the V lock batteries on the back, which I would strongly recommend.

We used the camera in London, Paris and Venice and once we had figured out the best way to utilise its potential, it was a joy to work with, delivering a filmic and crisp powerful image, particularly in lower light conditions.

We also used the camera on small internal shoots in travelling cars at high speed,

interviewing people on the move and caught in the middle of hostile political marches, and you couldn't wish for a more user friendly machine, tough durable and with a professional cameraman at its heart. Compared to the design on the market of other HDV cameras it really has no peer.

The GY-HD101 also creates wonderful images using the P+S Technik adaptor (www.film38.com), which enables film style lenses to be used in capturing the image and building a stronger even more filmic look with wonderful depth of field, and images that come close to competing with HDCAM cameras that are over twenty times more expensive. Having said that, the look is different, slightly more gritty, but still filmic and on images that were subsequently graded, this is not a camera that gives a DV image. One needs to know what you can do with HDV and work with in that frame, as it is not film, but once the lessons are learnt, then you are really set free with this camera.

'The Secret Philosophy', the film has a very Orwellian, doomsday feel to it as it takes the viewer on a journey of one man's loss towards a secret never told before. We made use of the camera's ability to observe without being weighed down. Having researched thoroughly the possibilities of what is revealed in the film, we needed to use the camera as a spying machine, as well as a high end image recorder, and the mix worked wonderfully.

We would not have been able to reveal the truths that lie behind *The Secret Philosophy* without this camera being part of the filming package. And now with the added HD recorder on board, you can synch the footage seamlessly into your editing machine. The future for independent film and documentary makers is bright.



Frames taken from *The Secret Philosophy*.

The next generation of film makers

Like many university graduates, Safeena and Rosina Chaudhry went travelling after obtaining their degrees. At The Home for Abandoned Children in Luxor, Egypt, Safeena found inspiration for a documentary. She returned a year later to make a pilot using a JVC mini DV camcorder. She soon realised that more training in the making of films would be required, if she was going to be taken seriously. With the help of The Princes Trust, Safeena and Rosina set up Proximity Pictures and have since trained with the Documentary Film Makers Group in London and also with a global charity, making short documentaries. Over the past year, Safeena has assisted and shot footage for live events, short films and weddings.

The Princes Trust scheme helps people between 18 and 30 years old to set up their own businesses. "I wanted to set up a production company as my background is in writing and story telling." Safeena explained, "The Princes Trust part financed the production company and I have received additional funding from elsewhere." Within the scheme, mentors are provided to help guide the young entrepreneurs through their first few years of setting up their businesses. Safeena was paired with Alan Brill, because of the nature of the production company and his technical and broadcast background. "Alan is invaluable as a mentor; he has provided me with many contacts and advice that has enabled me to make good decisions and purchase the right equipment."

Safeena first heard about the GY-HD101 at Video Forum 2005, where she picked up a copy of JVC's first Highway magazine. "At the time, there was a lot of talk about HDV, but as a new format it was just being explored and standardised. A few months later, both Alan Brill and Carlos Soto recommended the GY-HD101." Safeena was more than satisfied with her purchase and the service provided by JVC "I was impressed with the size and weight of the camcorder, Rosina and I are quite small, but have no trouble using it for prolonged shoots. The interchangeable lens capability is a great feature and, should I need it, JVC provide excellent technical support."



Safeena Chaudhry shooting in urban setting

There were other makes & models of high definition camcorders available when Safeena went to purchase hers, and after some careful research she decided that JVC's ProHD really was the one for her. "The 101E had the edge, as it not only shoots in progressive but also can output in interlaced. It also shoots in 24p and for someone like me, who writes short film scripts and would like to make documentaries, this means that I can achieve that 'film look'. I am excited about shooting in high definition, and it is also nice to have the versatility of shooting in standard definition for wedding videos, which is to be my first line of income for the next few years." Shooting weddings is a pressurised job because you only get one take, and so each shot has to count. Safeena is confident with the GY HD-101 and so can be more creative, and this keeps her clients very happy.

To date, Safeena and Rosina have shot a number of wedding videos, a live music event at the Peacock Theatre by Zonation, and a Kung Fu training session. Safeena has also produced a commercial for IslamExpo, which was aired on digital television in four different languages. "As part of a two camera team, I recently shot a short play which was shown at Croydon Clock Tower as part of Discover Islam. With the GY-HD101 and my own editing software, the film making process is a lot more streamlined and cohesive than it was when I had to borrow equipment. My purchases have given me the best possible start; I am sure they will continue to do so, well into the future".

German camera man Lars Schwetje is creating a series of GY-HD100 workshop programmes that will be available as Podcasts through Apple's iTunes Music Store free of charge

Podcasts are episodic audio or video programmes that you can subscribe to via the iTunes website.

(<http://www.apple.com/itunes/download/>).

After subscribing to a certain Podcast your PC or MAC will check for availability, then download any new episodes automatically. It will also synchronise with your player and transfer all downloaded podcasts each time it is connected to the computer.

These particular Podcasts will include information on all aspects of using the GY-HD100, with examples and demonstrations. Lars Schwetje lives in the beautiful San Francisco Bay area and uses this environment for the background of the workshop. The first programme is available now and can be subscribed to via the iTunes software. Apple iTunes Podcast:

[itpc://rss.mac.com/schwetjelars/iWeb/JVC%20HD%20Worskhoop/Podcast/rss.xml](http://rss.mac.com/schwetjelars/iWeb/JVC%20HD%20Worskhoop/Podcast/rss.xml) (prior installation of iTunes software necessary)

In order to make the workshop available to as many people as possible, JVC has uploaded the programme to additional video servers which can be viewed on your computer via Google Video:

<http://video.google.com/videoplay?docid=2646392578266177675> (direct link to video) and via You Tube:

<http://www.youtube.com/watch?v=YcxhXIYJXRw>

(direct link to video). Unfortunately a subscription is not possible on these web pages.

Please note that the Podcast is designed to be viewed on a 2 1/2" display, therefore the image quality will be low.

Visit Lars Schwetje's own website <http://www.tvreports.tv/>

The People's Choice at Cannes 2006 is the GY-HD100

Award-winning director Paul Wiffen has been using the GY-HD100 in earnest since the beginning of the year. Here is his evaluation of what it means to filmmakers on a budget

JVC has always been at the cutting edge of HDV for me. I had been using the NTSC-only JY-HD10 since it first appeared and apart from the inconvenience of the frame rate issue, found that it produced outstanding results. 18 months ago I shot my first proper drama short 'Personal Justice' using two of them and the resulting film was accepted into Cannes last year and also picked up a nomination for cinematography in London. The richness of the colour it captures is second to none.

On a properly costed feature film, I always budget to shoot in full High Definition and use a separate DoP (Director of photography) supported by a full camera operating team. However, on shorts and documentaries there is rarely the time or the money for such luxuries. The more people on set, the more slowly you end up working, and costs spiral as a result. The only drawback with using the JY-HD10 was the frame-rate issue which often led to a jerky motion when transferred to PAL DVD.

What I found exceeded my wildest expectations

So when I heard that JVC were releasing a more upmarket implementation of HDV which could be used at PAL frame rates and with more professional sound capabilities, I was of course very interested and made arrangements to check one out as soon as possible. What I found exceeded my wildest expectations. In the first demonstration I saw a control of depth of field normally only possible on 35mm film cameras. Of course, it was then a few months before a suitable project came up for me to try it out. In January of this year, I had to make a trailer to help raise finance for my 'Slavegirls of

the Empire' feature film. Again, there was no budget for a separate DoP or camera operator (or indeed sound guy). It was going to be only me behind the camera.

More like a film camera than any other video camera I have ever used

From the first moment that I used the GY-HD100, I felt I was using a totally unique camera. For the first time on video, I was seeing the ability to draw the viewer's eye to a very specific area of the picture, by making it pin sharp whilst leaving both the foreground and background in a softer focus. Indeed it was so sensitive to the slightest adjustments of focus, I found my early rushes suffering from the distracting phenomenon of a door just behind the subject's head being more in focus than their face. Normally, video is very forgiving and if you are roughly in focus everything is equally visible. The GY-HD100 is more like a film camera than any other video camera I have ever used. I found that very fine adjustments of focus could move the viewer's attention from one subject to another when they were only a few feet apart because of the restricted depth of field.

Of course, this means you have to be more careful with focus, and it really is worth having an HD (High definition) monitor on-set to check out the point of focus before every take. In my first couple of days of filming, I found myself having to re-shoot because I hadn't had such a monitor to hand. I was fortunate enough to be allowed to shoot at Dave West's new Mayfair club Hey Jo, which was decorated in a perfect early Middle Eastern empire style (somewhere between Sumeria and Babylon, which was just what my script called for) and Dave has spent a fortune on the most amazing ancient carved doors and furniture, the detail and colouring of which were perfectly captured by the GY-HD100. In addition, I was fortunate to work with some of the most beautiful actresses in London today and a combination of begging, stealing and borrowing had gotten us an amazing array of exotic costumes. The combination of all these factors made for a plethora of eye candy, which only a great camera would do justice to and the GY-HD100 came through with flying colours.

The results are very filmic. To achieve the same effects previously, I have had to use £50,000 cameras (and a highly experienced



Paul Wiffen is really chuffed at the on-screen, vox pop result

crew) That was till now. I was so pleased with the resulting trailer that I re-cut it into a short film and entered it in Cannes this year. Whilst in Cannes (from where I am writing this article) for the festival covering the World Premiere of the Da Vinci Code and the Playboy 50th anniversary party for a Japanese mobile phone company, I was invited to participate in the 24hour Film Challenge. This is where entrants are each given a title and a genre (I drew "Love on the High Side" and "Chase/Action"). The 24 hour duration of the competition starts then. You have to write, shoot, edit and score a 5 minute film and hand it in by the same time next day. Clearly, a camera that is simplicity itself to operate is vital.

through a variety of artificial light sources), the results look amazingly well-matched. When I finally dismissed my exhausted cast at 1am, I had just eleven hours to transfer the results across to the computer and edit them. Using Final Cut Pro HD made the transfer a breeze as the JVC algorithms are built-in. This means that you can edit at full HDV resolution. Of course to submit the film, I had to bring it down to DV resolution (which is what everyone else was shooting in). But using the HDV quality to shoot and edit and then downscaling makes a much classier looking picture.

A ringing endorsement

I guess the audience at the 24 hour Film Challenge screening thought so too, because although the official judges went for an extraordinarily funny comedy called Towel Talk, the audience voted overwhelming for our film, a ringing endorsement for the GY-HD100.

Judge for yourself by watching both films on <http://web.mac.com/mwgray/iWeb/Rocket%20Pictures%20in%20Cannes%20-%202006/Cannes%20Podcast%20-%202006/Cannes%20Podcast%20-%202006.html>



A partisan section of the crowd cast their votes

What do you give the movie-maker who has everything?



Smart, high resolution cellar in Dublin (1)

One of Dublin's premier post-production facilities has built its new state-of-the-art hybrid digital interface suite DI-1 around a JVC DLA-HD2K Projection System.

Screen Scene in Upper Mount Street counts among its clients the state broadcaster RTE and the regional offices of the world's largest advertising agencies – as well as cutting-edge multimedia project managers for end-users like U2.

These people are technically very savvy, says Screen Scene's John Brady, and they know exactly what they're looking at.

"The whole principle behind the room was to do something different and make it more

comfortable," he explains. "The wow factor was a consideration but it had to be a good environment to work in."

DI-1 is a 3-piece room.

The usual layout is, the operator facing the monitor at the wall with the clients all seated behind him.

Operator Gary Curran now sits at the back – probably with the director or DoP – looking at the 23" CRT, able to work and confer easily. Clients sit in front, as close as possible to the action on the projected 7 foot-wide screen so they can see just how well their money is being spent.

Then to the side is an annex area – very important for meetings on, say related projects or other work. Traditionally, telecine sessions were all-day affairs in a darkened room, which meant that no other work or activity that wasn't directly related to the post-production process would have been possible.

The whole project nearly fell at the start, owing to the fact that seemingly, the only projection system up to the job at the time of planning was the size of a downstairs loo and would have

required considerable structural enhancements for ceiling-mounting.

"Then the JVC DLA-HD2K came out and it was the first to offer a true, hi-def chip with proper 1920 and no upscaling," explains Brady. "We had enquired about the Barco but the physical mass of it and the price tag of about 70,000 more than the JVC 2K simply bears no relation to the difference in performance."

Gary Curran adds "The pedigree of the JVC projector also was such that we knew we simply had to put it high on the shopping list. For example, we knew that Brainstore in London had installed one. Eurotek brought one in for a demo and we were just blown away by the pictures. It really didn't look like a projected image at all. We weren't having to make excuses to clients like the blacks look a little milky or the images look a little electronic or noisy."

JVC's stunning projection system uses totally new HighD D-ILA chips, provides the look, feel and resolution of cinema film. The 2-part system comprises a Projector Head containing three native 1920 x 1080, true HD resolution chips and a Digital Video Processor with Up-converter. It is ideal for critical viewing

venues and applications such as post-production units for screening rooms and colour grading of "digital intermediates", high-end home-cinema, life-size CAD design and 3-D graphics and walk-throughs.

There are only two facilities in all Dublin that do telecine and high-end colour correction. While one or two might grade on Blaine or Colour Quad Pro, Screen Scene is the only company with a facility dedicated to colour correction and grading. They have turned the telecine more into a scanner, so that rather than being merely a creative tool they also use it to scan all the information to the disk store for access.

Then, of course, there's the WOW factor...



Smart, high resolution cellar in Dublin (2)

Wildlife on 101

Cambridgeshire-based production company to shoot wildlife training DVD on two GY-HD101E ProHD camcorders.

Nigel Cooper explains why his production company chose to use two GY-HD101E ProHD camcorders for their forthcoming training DVD entitled *Successful Wildlife Videography*. The training video is being produced in conjunction with the magazine and website named DVuser. The DVD will explain and demonstrate how best to film wildlife and nature under the expert guidance of a well known UK wildlife presenter & cameraman.

The Nature Of Wildlife Programmes:

Over the years there must have been hundreds of wildlife programmes shown on TV, with some of the more notable ones being the BBC series *Blue Planet*, *The Planet Earth*, *Wildlife on One*, *Bill Oddie Goes Wild* etc. Also, let's not forget the long running Anglia TV series *Survival*, which ran for an amazing number of years from 1980 to 2001. However, for all these wildlife programmes shown on TV over the years, nobody has actually made a programme or training DVD that explains how all that great footage is achieved. So DVuser decided to step in and consult with professional wildlife cameramen and wildlife TV presenters to put together a script that will give away the great trade secrets of wildlife filmmakers, bringing these great tricks and techniques to the low-budget independent wildlife filmmaker for the very first time.

Why We Chose to use JVC GY-HD101E ProHD Camcorders.

We believe that there is a very strong argument for shooting wildlife programmes and documentaries in the progressive recording mode. Wildlife programmes have traditionally been shot on film, ie 16mm, Super16mm and even 35mm. This has been always been the case, ever since wildlife documentaries were first produced. Today film remains the dominant format for high-end productions, though some of the new digital HD video acquisition formats are making serious inroads, and for reasons that will be explained.

To record wildlife in action and in the way you want it often requires many hours of filming just to get a few seconds of priceless footage for the final programme. Because of this, shooting on film can rapidly become a very expensive business, even for the BBC, who have slightly bigger budgets than us smaller production companies.

During our research we looked at many camcorder models from different manufacturers, but we kept coming back to the JVC GY-HD101E. There were several key features that we needed our camcorder to have: native progressive recording, native HD 16:9 chips, professional audio with balanced XLR inputs, interchangeable lenses with adaptors for stills photographic lenses, long battery running times, a tape recording format with external hard disc recording option, plus a full range of professional accessories and, finally, it had to be affordable.

Let's break down these requirements and explain their importance relative to the job in hand of making the training DVD, *Successful Wildlife Videography*.

Progressive Scan Recording:

As mentioned above, for years wildlife documentaries were traditionally shot on film at 24 fps (frames-per-second). Hence the strong argument for shooting in progressive mode on a digital tape-based camcorder, in order to achieve this same 'film-look'. The GY-HD101E is one of the few camcorders that shoots natively in the progressive mode. During the production of this wildlife training DVD we will be shooting in native 720p/25p HDV mode on the GY-HD101E. This is as near as dammit to 24 fps and will still amply give us that traditional 'film-look' of wildlife programmes. Also, 25fps is far better for UK PAL television due to the 50 Hz refresh rate standard, whereas shooting at 24 fps would not have suited our purposes. The native progressive shooting mode also has image quality benefits as it does not suffer from the artefacts that can arise from interlaced imaging. The Kell factor is not as well known about as it should be. Basically it calculates how interlaced video is vertically filtered to about 70% of the full resolution it would be if it were progressive, so 1080i has approximately the same vertical resolution as 720p. The progressive HDV format (HDV1) uses a superior GoP (Group of pictures) algorithm than the interlaced HDV format (HDV2), which uses a 15 frame GoP algorithm. The 720p HDV format uses a GoP algorithm of just 6 frames. This shorter GoP yields better quality as there are more 'I' frames for the footage to hang together on. I find that

complete, progressive frames (as opposed to interlaced ones) yield better quality video images and that motion looks more authentic and pleasing to the eye.

HD Quality:

The next issue for us was quality. Although the majority of DVDs that will be sold over the next few years will continue to be in standard definition, HD DVDs will become more popular as HDTV sets and HD and Blu-Ray DVD players start to dominate British homes. Our wildlife training DVD is going to have a very long 'shelf life', so shooting in HD now will allow us to have duplication runs onto HD DVD or Blu-Ray discs in the future. Also, with its native MPEG-2 TS (transport stream) compression, JVC's 720p recording provides a signal that is easily transferable to these new DVD formats. So for us, 1280 x 720 progressive HD quality was never a question, it was simply a must.

Native 16:9 Widescreen CCDs:

This goes without saying in the production of today's video content. Native 16:9 widescreen DVDs are now the norm because most British TV viewers own widescreen TV sets. Besides, a native 4:3 progressive scan camcorder would not be up to the job as we would need to use either an anamorphic lens adaptor, which simply degrades the quality and can also add serious barrel distortion and chromatic aberrations, or, worse still, use the camcorder's built-in widescreen effect, which messes with the pixels and kills resolution. The GY-HD101E has three widescreen CCDs which are each of the same true native 16:9 resolution as the format it supports, namely 1280 pixels horizontally by 720 in the vertical.

Professional Balanced XLR Audio Inputs:

Audio content is just as important as the video and, in some shooting situations, even more so. We shall be using some long-range Sennheiser rifle mics during the shoot because, after all, some of the wildlife we are going to be filming will be a very long way off; anything up to 300m away. Professional quality audio is vital for this shoot so the two balanced XLR inputs on the GY-HD101E will go a very long way towards helping us achieve professional quality audio.

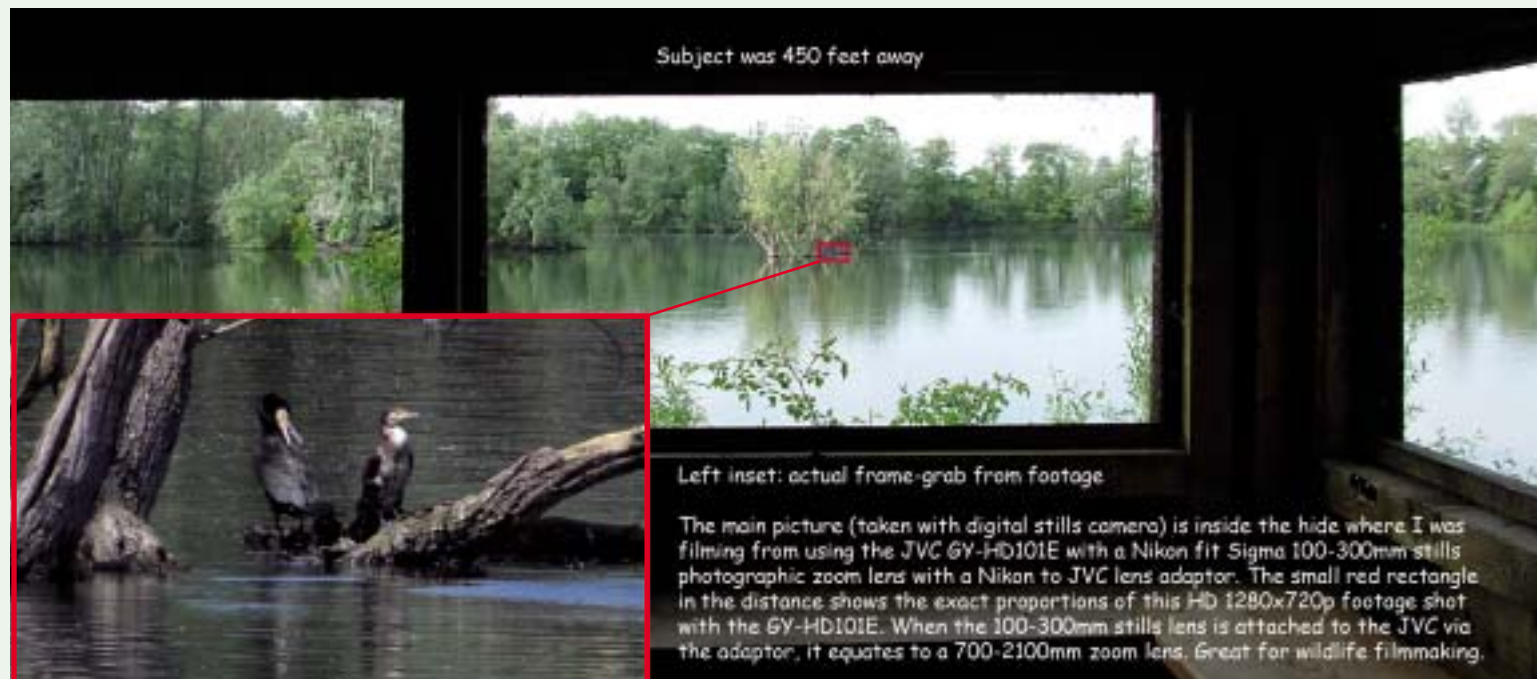
Interchangeable Lenses & Stills Photographic Lens Adaptors:

A camcorder that has an interchangeable lens system was top of the list of requirements for this shoot. There are certain shots in wildlife videography that require the cameraman to be a considerable distance from the subject; keeping well out of the subject's 'circle of fear', to prevent disturbing the subject and having it flee, or worse still, turn against our crew and attack. The GY-HD101E not only has superb optics, specifically made by Fujinon and soon by Canon, but also you can buy third party photographic lens adaptors, which allow the use of photographic stills lenses on the GY-HD101E, such as those used on Nikon and Canon 35mm SLR stills cameras. Due to the difference in chip size between camcorders and stills 35mm cameras, the focal range of the photographic lens is increased by almost 7x, so, when you use a 100-300mm photographic zoom lens, it will become roughly a 700-2100mm zoom lens once attached to the GY-HD101E. Adaptors are available for both Nikon and Canon stills lenses.

For our wildlife training DVD we shall be using a 100-300 Sigma professional APO Nikon fit lens, which equates to a photographic equivalent of around 700-2100mm. This means we can fill the frame with a small kingfisher from 100m away. Due to the extra weight and length of this lens we will also be using a TLS matte box support rail system, which has a lens support bracket that bolts straight into the lens's tripod bush. This will ensure that the camera and lens remain clamped together perfectly and will prevent the heavy lens from drooping down slightly and also from putting extra strain on the camera's own lens mount.

Long Battery Record/Standby Running Times:

Filming wildlife requires lots of patience; sitting in hides for hours on end, perhaps all day, sometimes all weekend, just to get a few seconds of usable footage. For this we needed power, and plenty of it. Several companies have manufactured after-market professional V-Mount adaptors for the GY-HD101E, which allows the use of the larger capacity V-Mount batteries. During this shoot we decided to go for the Hawk-Woods V-Lok Pro battery adaptor for the GY-HD101E. Hawk-Woods supply batteries for Panavision UK and are an industry standard and have a great reputation for build quality, reliability and durability. The Hawk-Woods adaptor also bolts to the bottom of the GY-HD101E under the sliding shoulder pad, as well on top, so the mount is incredibly secure; this added strength is vital in the field, where knocks are inevitable. With a Hawk-Woods VL-100 Li-Ion battery we can achieve 5 hours continuous record time and with a VL-160 we can record continuously for 8 hours; that's an entire day's recording in which we can get through eight ProHD 63 minute tapes or fill one 80 GB hard disk drive.



Subject was 450 feet away

Left inset: actual frame-grab from footage

The main picture (taken with digital stills camera) is inside the hide where I was filming from using the JVC GY-HD101E with a Nikon fit Sigma 100-300mm stills photographic zoom lens with a Nikon to JVC lens adaptor. The small red rectangle in the distance shows the exact proportions of this HD 1280x720p footage shot with the GY-HD101E. When the 100-300mm stills lens is attached to the JVC via the adaptor, it equates to a 700-2100mm zoom lens. Great for wildlife filmmaking.



Photographic lens Sigma 100 – 300 mounted to GY-HD101 by lens adapter.

Tape-Based Recording Format:

Due to the large amount of footage we are going to be shooting during this production, the cost of recording media was always going to be a major consideration. Tape has come a very long way since it was first introduced by Philips back in 1964 and it still has a very long and good future. These days, tape-stretch and dropouts are virtually unheard of. However, my first strict rule is always to use the highest quality tapes and always from the same manufacturer as the camcorder itself. My second rule is to keep the video heads and mechanical record mechanisms i.e. capstans etc in perfect trim by using the recommended head cleaning tapes at the recommended intervals.

For this production we will be using JVC's DV63ProHD professional tapes; and lots of them.

Hard Disc Recording:

Although this option was not number one on our list of priorities, we knew we wanted to use, in addition to the tapes, an external hard disc recorder, with either 3 1/2 hr (40GB) or 7 hr (80GB) recording capacity. There were two main reasons for this. Firstly, it will prove invaluable in the wait for the first appearance of birds and animals because the JVC DR-HD100 hard disc has a programmable recording buffer. This means that we can 'retro-record' the first few minutes or hours of any clip using the buffer system with no need to be in record mode all the time, so we will not miss a single trick. Secondly with its file pre-formatting, it will speed up the postproduction processes.

Final Comments

Overall the GY-HD101E from JVC has everything we need to shoot this wildlife training DVD. One very important factor that I have not yet mentioned yet is its price. Because this training DVD is aimed at independent and semi-professional wildlife filmmakers, amateur wildlife videographers and students of film & video who wish to specialise in this area, it is essential that we use in the making of the DVD camcorders that all viewers of the DVD can relate to. From the beginning, we decided that we wanted to use a camcorder which is capable of producing professional and broadcastable HD quality footage, and which is also keenly priced and therefore within financial reach of independent low-budget wildlife filmmakers. The GY-HD101E comes in at well under five grand for the basic full working package, so it hugely qualifies in the budgeting department.

For more details about DVuser visit www.dvuser.co.uk and for details on the training DVD Successful Wildlife Videography (currently in production) email:

nigel@dvuser.co.uk or call 01480 374036

Nigel Cooper's production company specialises in training, corporate and special interest videos. In the past they have produced training programmes and DVDs on subjects such as baby care, stills photography, video lighting, gliding and fishing. They have even produced some music videos.

Wild at Heart

As a child, Yusuf Thakur (of VFX Productions, Dubai) was fascinated by wildlife and nature. Each year his family would visit the district of Vijaydurg, about 150 kilometres outside Goa, on the main Mumbai-Goa highway. "This part of the world was and, to some extent, still is a land with fascinating wildlife. It's here that my fascination for nature took firm root". He is currently shooting a new wildlife documentary series, which has the working title of Raising a Family. Yusuf Thakur specifically chose to use GY-HD100 exclusively for this shoot.



Conducting an interview on a remote island.

It was at NAB 2005 that Yusuf first saw the GY-HD100 and had a brief hands-on session with it. "It reminded me of the Varicam which we have used to produce many programmes. When I saw the picture quality I was immediately hooked, it was just stunning. **Here was a camcorder with everything in the right place, a removable lens, brilliant picture quality and a great price.** One did not need any more convincing; I decided there and then that I was going to buy this camcorder. The moment I came back to Dubai, I placed an order with Oasis the local dealer in Dubai, and we at VFX Productions were the first to buy and use one in the Middle East".

One big advantage of the camcorder is its small size and weight, though this aspect had not been on Yusuf's mind when he purchased it; he is now reaping the benefits of its easy portability. "I am a big guy, used

to hauling gear around, trekking about with full size Betacams plus all the accessories. I simply did not know any different or better. Now, for me the GY-HD100 is featherweight. The large 35mm adapted lenses which I mount on it are no more than 2.5kgs, so the overall package is extremely light and easy to carry long distances."

One thing that Yusuf strongly dislikes about some wildlife documentary makers is that they do not have the patience to wait for the perfect shot. He believes that the perfect shot takes a lot of time and effort, if a situation is manipulated then it is not worth shooting. "There are different levels of preparation. First there is the research, then getting the gear together, and then the crew. Research is on two levels, pre-shoot and post-shoot. We have a good team of scientists working in their respective fields, guiding us on the shoots. Luck is another commodity which we need by the ton, but the most important thing is to stick it out till you get what you want, without manipulating or faking it. I have stood in the same place for 18 hours, with the tide coming in and going out, the water rising to my chest, but eventually I got the mating shot that I wanted."



GY-HD100 rigged up with 35mm stills lens.

Since making his first wildlife documentary in 1995 Yusuf has learned many things, one is not to become complacent. "Over the years I have gained patience and dedication. You must be prepared for the



A pair of ospreys think about getting a bit more matey.

unexpected. To date we have had an incident-free shoot with Raising a Family, but we have faced death and lost cameras at sea in the past."

There are three cameramen working on Raising a Family at the moment, with two underwater specialists joining in a short while. At any given time, the crew is no more than five cameramen, split into two groups, each filming independently. "For the content of the Raising a Family series, we have managed to capture five species of birds in detail, plus the Dugong and some other marine animals. Using the GY-HD100, I have shot a pair of Ospreys mating and recently I managed to capture crabs mating. It was shot from a top angle, as well as from ground level. While shooting, because the subject was so small, we did not realise what we were getting. Back in the studio, the images on the HD monitor were stunning: the colours, clarity, and sharpness and most important of all was the action itself. Two crabs were locked in an embrace, as the other two were waving at them. Things like this are why documenting wildlife for me is such a deeply satisfying area of film making."

In Digital Studio magazine, earlier this year, Vijaya Cherian wrote an in-depth article on Yusuf, which covers the making of this new documentary series and Yusuf's opinions on the latest HD camcorders. To read this article, along with other user stories, industry reviews and product information, please visit www.jvcproeurope.com/prohd

Above and beyond the call of duty, GY-HD100 delivers in Madagascar



Andrew Young gets his feet wet.

During NAB 2006, Andrew Young gave short seminars of his experiences with the GY-HD100. They included a short film that he had specially edited in order

best to display the amazing image quality. These sessions were extremely popular and were always followed by a busy questions and answers session.

Andrew has 25 years of experience as a film maker; he has a reputation for straying off the beaten path and shooting in remote locations and for getting unique footage. This is probably why he was assigned to a recent shoot in Madagascar for National Geographic Television and The Bronx Zoo.

Andrew followed a team of scientists on a white water rafting expedition into an unexplored forest. He chose to take ProHD camcorder GY-HD100, as he needed reliable equipment that was both small and lightweight. The Bronx Zoo would be projecting the footage onto a 15-foot screen, which meant that high definition was a critical requirement.

The interchangeable lens flexibility and the camcorder's layout gave Andrew the confidence to operate as a one-man-band film maker. Because the camcorder's controls were where a cameraman would expect them to be, Andrew was able to concentrate on the subject matter rather than having to worry about how his equipment was performing.

The GY-HD100 was pushed to the limit, as Andrew rafted through rough, uncharted rapids, hoisted the camera up trees, and shot in days of endless tropical rain. Several times he inadvertently used the camcorder to break his fall when he slipped on rocks or was being tossed around in the raft. To dry it out, Andrew had few other options other than to slow-roast the extremely wet and battered JVC camcorder over an open fire. It did the trick and an amazed Andrew was able to finish

the job and come home with clean and beautiful footage.

Sections of this footage were transferred to 35mm film and shown at NAB. In spite of the difficult conditions, the footage had held up brilliantly well and professional high quality results were achieved on just a mini DV budget.

A detailed account of Andrew Young's experience in Madagascar can be found in the user stories section of Aspects of ProHD. www.jvcproeurope.com/prohd



Andrew Young drying off more than just his feet.

JVC Net-Tools



Dynamic multimedia content management with diverse diffusion and display

It is strangely difficult to be concise when attempting to describe in simple terms this fascinating new software-based screen display system from JVC, called Net-Tools. Basically, it allows any number of display points, around the world or locally, to inform, to entertain or both. Everything is set up, managed and scheduled from one single, central point.

This nucleus, comprising Net-Tools creation station and Net-Tools scheduler, diffuses audio-visual material to local terminals by simple cable, LAN, internet or satellite. The terminals feed the av content to display screens or projectors, which can be grouped or individual. The system runs on Windows XP at the creation station and at each player terminal.

The two central software programmes, Net-Tools Creator and Net-Tools Scheduler come packaged with the quantity of Net-Tools Player software licences required, where that number can range from one to thousands.

System monitoring & maintenance software is included in the package. This too is managed centrally, though not necessarily from the same central point as the creation station. This means that content could be managed from one building, town or country, whilst maintenance is managed in a completely different one. Some local control of the Player is also possible, subject to permissions, passwords and restrictions which are controlled from the centre.

One of Net-Tools' key features is the facility for each Player to have its own play-list. This means that the local programme or information content can be quite different at every terminal. Furthermore, by using additional servers, new individualised content can be diffused simultaneously, in real time, to every display or group of displays. For example, the same European information set could be shown in every European country, at the same starting time and always in the local language and including any local variations.

The audio-visual content is true multimedia with the added feature of real time play-out. So, whether it is a good old-fashioned Powerpoint, an internet weather report with a camera feed or a set of live and dynamic data from the stock exchange, Net-Tools handles the lot with consummate ease, at the same time and on the same screen, and all in real time.

**Communication - the creativity and content come from you.
Net-Tools simply delivers. Where you want, when you want, how you want.**

Integration of multimedia

Word text, graphics (BMP, JPEG, PNG...), video (MPEG 1, 2 and 4, WMV in SD & HD), animation files (Flash, Quicktime), HTML pages, Powerpoints

Key features

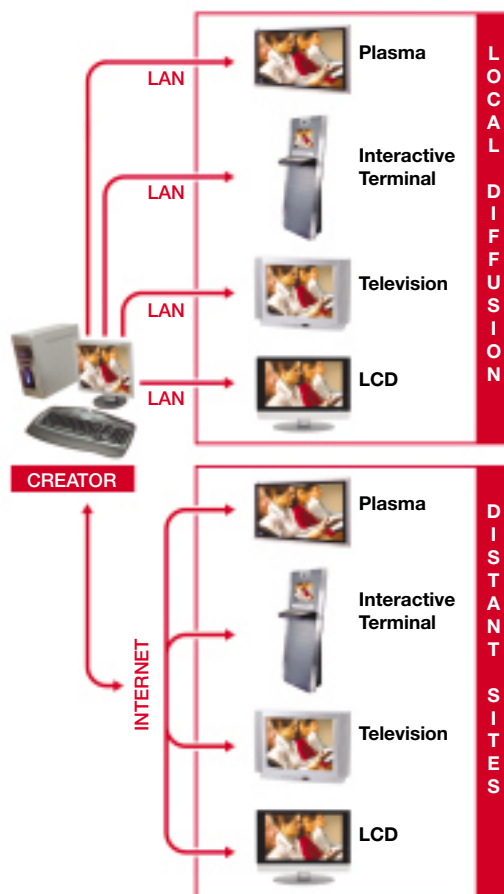
- Selection of over 100 transitions (wipes, fades, dissolves)
- Real time messaging overlay
- Central remote controlling of local display screens via RS 232 protocol

Typical users

Hotel chains, banking groups, travel companies, retail outlets, airports and railway stations.

What's so good about it

The screen content, already pre-programmed to suit the different types of local viewers that will pass by at different times of the day, can at a moment's notice be changed in real time to suit a sudden change, new requirement, new offer, new audience or new circumstance. Messages can equally be superimposed in real time.



Net-Tools in a Nut-Shell

The creation, management and scheduling of digital multimedia content at one central point for diffusion by LAN, internet or satellite to widespread terminals for local presentation on any kind of display device.

New, enhanced 3-in-1 digital recorder DV - Hard Disk - DVD with analogue and digital inputs

Digital recorder and also ideal bridge between analogue and digital

JVC has got it right. The professional AV and video market needs exactly such a flexible deck, offering almost every permutation in recording, playback and editing that is possible between analogue and digital inputs with record & play drives for digital tape, hard disk and DVD.

The SR-DVM700, superseding SR-DVM70, is the ideal bridging deck between analogue and digital. All your standard definition analogue archives can now be transferred to digital as DVD discs, and a key feature is the simplicity. No PC required and automatic indexing.

Designed as a transfer deck and born for digital delivery

- From analogue equipment to digital formatting and storage
- From analogue tape archives to DVD, via Hard Disk Drive
- From digital tape to DVD, via Hard Disk Drive
- From NLE to DVD, via Hard Disk Drive



SR-DVM700 Front.

Versatility includes 8x replication of DVDs

The most obvious are (i) *digital archiving*: whether your current archives are on VHS or S-VHS tape cassettes, or on DV tape, you can now index the contents for non-linear access, as you store them on DVD. (ii) *mastering off an NLE*: input final edited program and customise its index and contents, ready for (iii) replication, either low quantities at hi-speed (8x) on the DVM700 or, for larger quantities, sending the master to a commercial replication facility.

For more information visit our website, looking under 3-in-1 Recorders



SR-DVM700 Rear.

Two new 10" monitors - Same chassis & size - Similar appearance - Different applications



TM-1011G monitor 10" with AC / DC operation

JVC has just introduced two new 10" professional CRT monitors. You should know that JVC's 2-part monitor policy is (i) to maintain its proudly held position in Europe as a leading supplier of professional CRT monitors and (ii) to introduce LCD monitors not as a matter of principle but rather as a function of acceptable levels of LCD panel performance and price being attainable.

The new 10" monitor, TM-1011G, has a compact design, is only 5U high and can be powered by either AC mains or DC battery. It has a (removable) carrying handle and comes with threaded slots, which allow Anton Bauer, IDX and PAG standard battery brackets to be mounted on the monitor itself. Ideal for field use.

Equally ideal for the studio or OB van, because two units fit side-by-side in a standard EIA rackmount. It also features RJ45 remote control socket and advanced OSM (on screen menu) for customised set-up, which naturally includes the basics of 16:9/4:3 selection and underscan.

The other similar new model of 10" monitor is TM1051DG, where D stands for digital, having twin SDI inputs with switched output.

Details of both these monitors are included in JVC's single page **CRT Monitor Quick Reference Chart** which includes the full range of JVC's professional CRT monitors with prices. This reference chart is available on request in hard copy or electronic form from marketing@jvcpro.co.uk



TM-1051DG monitor 10" with twin SDI inputs

How a small box mightily speeds up the HDV workflow

Mike Schell of Convergent Design Inc. looks at trends in HD workflow and explains how an inexpensive HDV Converter can bring about real time HDV editing, besides offering other benefits to the busy video editor

HDV in context

We are rapidly moving into a high definition world. HDV was created specifically to meet the needs of budget-conscious producers and editors. HDV is already transforming High Definition video in a similar way that DV transformed Standard Definition, starting back in 1995. We should begin by comparing HDV to the well-established DV format:

Format	HDV1 (720p)	HDV2 (1080i)	DV
Video Signals	720p24, 720p25, 720p30, 720p60	1080i50, 1080i60	576i50, 480i60
Number of Pixels	1280 x 720	1440 x 1080	720 x 576 720 x 480
Video Resolution	HD		SD
Aspect Ratio	16:9	16:9	4:3
Tape Format	Mini-DV		
GOP* Length	6	12	1
GOP* Format	IPB		I-Frame Only
Video Sampling	4:2:0, 8-bit		4:2:0, 4:1:1; 8-bit
Video Compression	MPEG2 Main Profile @ H-14		DV
Video Compressed Rate	19 Mbps	25 Mbps	25 Mbps
Audio Sampling	Stereo, 48 KHz, 16-Bit		
Audio Compression	MPEG1 Audio Layer II		None
Audio Compressed Rate	384 Kbps		1.5 Mbps

*GOP = Group of Pictures

As can be seen from the above chart, HDV produces high definition video at data rates that are directly comparable to standard definition DV video. HDV is able to achieve this by using a different compression algorithm from DV. HDV, using an MPEG2 compression system, is able to provide an approximate 5-fold improvement in compression efficiency over DV (using Motion-JPEG) whilst still providing high definition picture quality.

The downside of editing with HDV

The superior compression efficiency of HDV is excellent for acquisition and distribution of video. However, it presents some real problems when it comes to video editing. The complexity of an MPEG2 based compression system can significantly increase the processing required for non-linear editing, and many editors have concluded that HDV, while ideal for shooting, is not the ideal format for creative editing. For them, I-frame editing is their strong preference. The advantages of I-frame editing are explained in more detail in the insert.

Releasing the power of a non-linear edit system

In order to achieve maximum productivity from a non-linear system we need firstly to reduce the amount of processing power which is dedicated exclusively to decoding and encoding footage and then secondly let that newly freed power contribute, in real time, to the creative content.

To release the full potential of a non-linear system, we need exclusively to edit material which has been captured into an easily handled format, such as uncompressed video or a Motion-JPEG based codec. At this stage we can choose between two workflows:

1. We can use the processing power of the host computer to transcode from HDV into an easily editable format. However, there are two major flaws in this method: Firstly, since transcoding is a heavily processor intensive process, this is going to take us a time approximately three to five times the length of the footage to perform. Secondly, timecode is often lost during this transcoding, and both an offline/online approach and the recapture of damaged media become impossible to perform.

Alternatively, the preferred method is to acquire the footage directly into the format we require. For this we will need to use a simple piece of hardware manufactured by, for example, Avid, Blackmagic or AJA, and can be purchased for as little as £200 (Standard Definition) or £350 (High Definition). This will allow us to feed uncompressed digital video into our system and, if required, compress it as a Motion-JPEG format such as DNxHD or DVCPRO HD. This gives us key several advantages:

- The edit suite is now running as fast and efficiently as possible.
- We can mix media from many different sources in our programme.
- We can produce accurate offline programmes for later conforming.
- Graphics and effects are rendered quickly and at far higher quality.
- We are not tied into editing within our shooting format (720p, 1080i).
- We can edit footage from sources not natively supported (Apple Final Cut Pro & Avid Xpress Pro do not yet currently support 720p/25).
- We can integrate studio footage without compressing vital keying colour information.

The rise of SDI and HD SDI

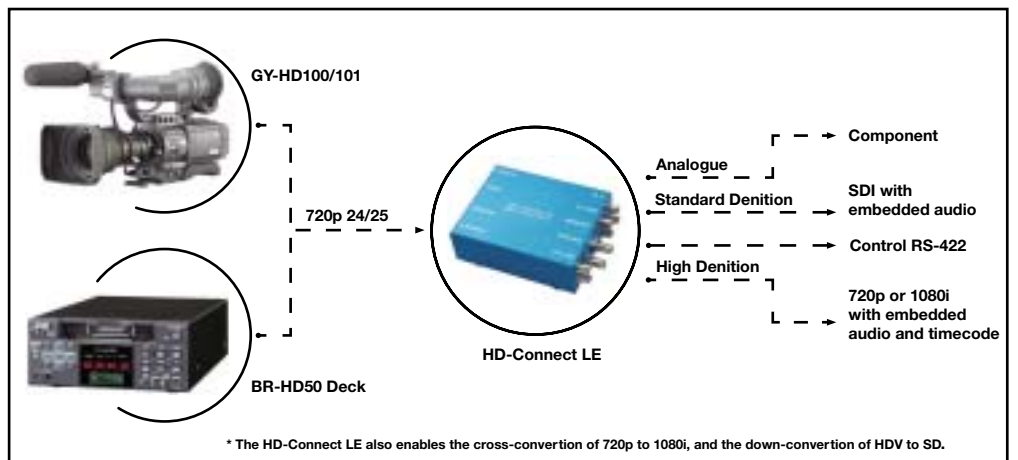
The common interface for uncompressed digital video transport is the Serial Digital Interface (SDI) combining Standard or High Definition video, embedded multi-channel audio and timecode within one coaxial cable. In fact, with high specification cable, the signal will run up to 300m without a repeater. This, and the single conductor nature of format provide an ideal solution for routing signals around studios and edit suites with no loss of sync possible.

HD-Connect simplifies HDV Editing

So far, we have reached the conclusion that the most viable way of editing is still to use uncompressed or Motion-JPEG media. However, how do we capture HDV footage? Enter the HD-Connect. This compact, stand-alone converter takes HDV directly from a camera or deck and, in real time, decompresses and scales the HDV stream to produce uncompressed HD or SD SDI complete with audio and timecode. What's more, it also converts the edit suite's RS-422 control protocol to HDV control to allow logging, batch capturing and conforming of HDV footage.

The simultaneous output of AES digital audio, timecode and analogue video on separate connectors also means that the HD-Connect lends itself to tape-to-tape dubs, including to HD-Cam and Digital Betacam, D9 and DVCPRO.

Accepting HDV1 720p at 24, 25 and 30fps and HDV2 1080i at 50 and 60 fps, the HD-Connect can cross convert between frame sizes including standard definition PAL and NTSC. Again, all in real time.



Conclusion

In using sophisticated MPEG2 compression, HDV has massively reduced the costs of HD video production by enabling high-quality HD video to be recorded and archived on low-cost DV tape. While an excellent format for acquisition and distribution, HDV presents significant editing challenges due to its complex compression and the amount of processing resource required to edit it. Capturing HDV footage using the same techniques we have been using to capture other formats for years can eliminate these issues.

HD-Connect presents your HD device to your edit system using the same connectors and standards as any other professional deck while saving you both time and money.

HD-Connect makes the highly affordable ProHD range from JVC even more cost-effective than ever.

HD-Connect LE is distributed exclusively throughout Europe, the Middle East and Africa by Symbiosis.

For more detailed information, please visit www.symbiosiseu.com

HDV editing and the advantages of using I-frames

The superb efficiency and picture quality of HDV is made possible by using MPEG2 compression to squeeze the most picture quality from the limited bandwidth available by the DV tape format. The video is compressed using both Intraframe (within a frame) and Temporal (between frames) processes. The first and least complex frames to be compressed are called I frames (I representing intra-coding). These are self-contained pictures. The next two types of frames are P (forward prediction) and B (bi-directional prediction). Both of these consist of motion information between macroblocks within it and its adjacent frames. The period of time between I frames is described as the Group of Pictures (GOP).

The issues with editing HDV occur when we place an edit point within a GOP. This is very likely, especially in HDV2 with a GOP length of 12 frames. In order to accommodate the selected edit point, a new GOP must be created since many of the frames within the original GOP are dependant on the other surrounding frames. This decoding, analysing and re-encoding takes large amounts of processing power, which most editors would rather channel to speed and creativity!

ProHD 100 Series is evolving

A year ago, on the front cover of the first edition of Highway, the GY-HD100 was billed as "The producer's dream camera". The article went on to explain that the ProHD concept was to pack a high quality of Standard and High Definition capabilities into a small and cost-effective camcorder.

What we have discovered since then is that the headline ought to have read "The cameraman's and the producer's dream camera". This is because, since we started delivering to users last Summer, the most common feedback has been "Wow! JVC must have spoken to real professional camcorder users before designing this", or words to that effect.

Of course, we did indeed consult with a wide range of professionals prior to finalising the design of the GY-HD100. It is exactly this consultation process that led to the compact-shoulder concept, the use of bayonet mount lenses, and all the other special features that really make ProHD stand out from other offerings as a truly professional production tool. Perhaps this is why sales quantities of ProHD have shocked some industry pundits, with more than 12,000 units now shipped.

However, there is no such thing as the perfect product, and since its launch our engineers have been gathering feedback from users all over the world as to how the camcorder may be further improved.

The results of these enhancements are manifested in a number of running changes incorporated in the new GY-HD110E and GY-HD111E and summarised below. These new models will replace the GY-HD100E and GY-HD101E as stocks run out.

- Viewfinder may be switched to Black & White display only.
- Simultaneous use of both eyepiece viewfinder and tri-mode LCD display, when powered by Anton Bauer, IDX or PAG battery system.
- Selectable mirror mode on vertically flipped LCD display.
- Focus Assist function now has three user settings.

- Choice of 3 image formats on composite output for monitoring (letterbox, squeeze, cut sides).
- Digital Noise Reduction level user-adjustable via menu.
- Audio level indicator segments increased to 13 for greater accuracy in monitoring.
- Manual audio control within FAS (Full Auto Shooting mode)
- Audio limiter available in manual mode.
- Parallel management of power off with DR-HD100 hard disk recorder.



***Want your
productions to
be seen at their
very best?***

***Get the
right tool
for the job!***

DT-V Monitors

JVC's High Definition CRT display range

CRT monitors remain the best, the most accurate and the most responsive way to display HD video. That's why JVC has retained the 17" and 10" cathode-ray tube DT-V models. But there's more to them than just picture quality. There's also the clever flexibility that comes with the modular input panels. Then there's the affordability.

When your HD programme needs to be displayed, the right tool for the job can be found within JVC's range of display solutions.

JVC

The Perfect Experience / —
/



If you want the right tool for the HD job, then call us on 020 8208 6204 or visit www.jvcproeurope.com