So you want to be a Steadicam operator?
Jason Williams tells his story as he launches into his new career as a Steadicam operator.

Canon XL H1 HDV Camcorder
Simon Beer takes a first look at Canon’s HDV offering.

Goodbye to tape
Panasonic’s P2 - A giant leap forward in tapeless production.

Final Cut Pro & Xserve RAID
Peter Wiggins spends 3 weeks on the road in Malaysia editing the Tour de Langkawi.

Better camcorder footage
Nigel Cooper’s top 10 tips for better camcorder footage.

Camcorder Info Base
Today’s Digital formats explained.

Competition
• Win Avid Liquid Pro
See inside for details
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Opening Scene

Welcome to the very first issue of DVuser magazine. For those who are not familiar with DVuser allow me to give you a bit of background. The DVuser web site was launched just over a year ago and up until now it has strictly been an online e-magazine. Since its launch back in November 2004 the site has gone from strength to strength. DVuser.co.uk is now viewed by an average of 27,000 unique visitors in the UK each month (that’s over a million hits).

So why did we decide to launch a printed publication when we already have the online e-magazine? Because you asked for it. We have received many emails over the past year from our site visitors enquiring if we had any plans to publish a printed magazine. We learned that DVuser site visitors would like to be able to read a real printed magazine on the train or tube as they commute to work, sit on the couch with a cuppa and enjoy a read in comfort, or simply to chill out on the balcony in the sun to read the magazine with a glass of wine perhaps. In most cases, our site visitors also said it is nice to get away from the bright lights of the computer screen and read ink on a printed page. So, there are plenty of good reasons for us to do this.

After a lot of research we decided that a printed magazine would complement the online web site perfectly. This new magazine will be published quarterly and will reflect on the various articles, features, tutorials etc. that have appeared on the web site during recent months. There will also be new features and competitions that will be published in the magazine some weeks before being published on the site.

So who is DVuser aimed at? The magazine and web site is aimed at the prosumer/semi-professional market i.e. independent video production companies, independent filmmakers, corporate production companies, music video producers, lighting cameramen, wedding videographers, editors, compositors etc. who are trying to establish themselves in the industry.

When we set up the DVuser web site in 2004, we did so because we felt that the UK was lacking a good quality free online e-magazine; what do we mean by that? If you are serious about digital video production either as an independent filmmaker, a self employed video producer specialising in corporate work, TV commercials or any other area of video production you will find magazines covering this area seriously lacking; just check out the shelves at your high street newsagent and you will see what I mean. They are either too basic and aimed at total beginners, or they are organisation-based subscriptions aimed at broadcasters, directors and producers at the top end of the broadcast food chain. DVuser (the magazine and the web site) is here to fill the gap in-between these two extremes.

Because we want you to keep DVuser magazine (as opposed to dumping it in the trash along with the daily paper) we have put in a comprehensive Trade Directory at the back, also, for this first issue I have written up a Camcorder InfoBase (page 28). In the second issue there will be a Lighting InfoBase, then a Sound InfoBase and so on. These various knowledge bases along with other great editorial content will make DVuser one magazine that you won’t want to throw out.

Did I mention that subscription to the new magazine is FREE! that’s right. If you want subscribe to our brand new free publication visit www.dvuser.co.uk and click on the ‘MAGAZINE’ link at the head of the page. Fill out your details, then sit back and wait for the magazine to drop through your letterbox.

Nigel Cooper
Founder/Editor
DVuser.co.uk
The Busterbite frame/gel system

Cirro Lite is pleased to introduce the Busterbite system. The inspiration of working Gaffers the Busterbite very simply solves a number of problems encountered by all productions small and large when using 4 x 4 Gel frames. It also allows more creative freedom when under pressure. The system works with the use of a simple bungy cord with a metal hook placed at each corner of the frame, this is stretched and hooked to each corner of the Gel, which in turn has a consumable Busterbite stick-on pad to prevent the gel from tearing.

The following is a list of the more obvious benefits of the system:

• Speed - Filters can be rigged and re-rigged in seconds
• Versatile - Several filters can be used on one frame
• Its silent - as the filter is taut at all times it is virtually silent in windy conditions.
• Its easy – filters are evenly stretched every time
• And to some most importantly very economical as you can use your gels over and over.

Like many of the best innovations in our industry the Busterbite system is a very simple solution that improves efficiency at the same time as saving costs.

Price: £156.90 plus VAT. For more information please call Cirro Lite on 020 8955 6700

THE NEW PARAZIP STUDIO LIGHT FROM KINO FLO

Kino Flo has expanded its line of high end professional studio luminaries with two new soft lights: the ParaZip 400 and the ParaZip 200 DMX variable control fixtures. The ParaZips display a wide soft beam of incandescent or daylight quality light that can be controlled without dramatic shifts in colour temperature. Lamps can be dimmed or switched via DMX or manually at the head.

Like the popular Parabeam, the ParaZip lights punch out a bright, even field of soft light specially formulated for TV broadcast. The shallow fixture profile makes ParaZips perfect for studios or locations with low ceilings. The ParaZips also run with Kino Flos Truematch lamps which match other light sources such as daylight and tungsten and also eliminates green casts so deplored by lighting designers. The ParaZip also has new variable controls to help stabilise colour when dimming.

Price: ParaZip 200 £1,060, ParaZip 400 £1,565 plus VAT. For further information please contact Cirro Lite on 020 8955 6700
European broadcasters flock to file-based production as Sony XDCAM sales soar – Now XDCAM HD is here too!

More European broadcasters are switching over to the benefits of file-based production as Sony XDCAM sales soar. With over 8,000 units already shipped worldwide, XDCAM represents the most successful ever professional format introduction by Sony.

“It’s particularly significant that many XDCAM customers are news operations looking for a faster, more cost efficient alternative to their existing tape-based workflows” said Senior Marketing Manager at Sony Europe, Olivier Bovis. “In an environment where getting on air quickly and controlling cost matters above all else, XDCAM makes file transfers between ENG crews, journalists and editors a single, seamless process.”

XDCAM choice and capabilities expand.

The capabilities of the Sony XDCAM family of Professional Disc production tools continue to expand. At IBC this year Sony announced a brand-new High Definition (HD) production format – XDCAM HD – plus significant feature upgrades for Standard Definition XDCAM users.

XDCAM HD: Combining High Definition picture quality with the attractions of non-linear, file-based production, XDCAM HD records true 1080-line HD pictures using MPEG Long GOP encoding at a selectable bit-rate of 35, 25 or 18 Mbps. XDCAM HD offers all the workflow advantages of its Standard Definition sibling at a price that’s within reach of corporate programme makers and regional broadcasters.

XDCAM SD feature upgrades: Standard Definition XDCAM users can now benefit from latest Version 1.4 system software that adds more than 20 feature additions. These include: A new ‘live logging’ function allows material to be viewed in real time and stored on a PC during acquisition. Crews shooting with XDCAM in the field can manually title shots, add essence marks and annotate clips without interrupting recording. This additional information can then be recorded back onto the metadata area of the same disc – cutting the time needed back at base to log and prepare shots for playout. Clips and sequences of clips can be pre-named. This convenient feature allows journalists and production teams to simplify subsequent viewing and editing of shots by pre-assigning names to each clip – such as “Amsterdam 001” – before shooting starts. Low-resolution AV proxy files can be recorded to removable memory – including all popular consumer media formats – simultaneously with recording to disc, keeping the perspective of using low cost media. There has also been positive confirmation of the format’s suitability for the toughest newsgathering and in-the-field acquisition tasks. A camera crew from RTL Croatia recently returned from the North Pole, reporting that XDCAM performed flawlessly when the format’s capabilities were tested in sub-zero conditions. Also available are the usual recording decks, both studio and field playback machines.

RRP price will be approximately £11,000, but retailers will probably sell for around £9,000. For more details see www.sonybiz.net

Modern Power for a Modern Camera
6000mAh of reliable power in a compact battery!

With the ever increasing power requirements demanded by today’s modern DV camera equipment comes the newest arrival to the Hawk-Woods product range. The DVL-1 Mini-DV Li-Ion Battery Pack is an alternative to Sony’s NP-F960 battery pack and is capable of providing a massive 7.2V/6000mAh of reliable power. This battery has already proved itself to be extremely popular within the broadcast industry by camera operators worldwide and its popularity continues to grow. One of the key features with this battery is its universality regarding charging options. The DVL-1 can be charged on-camera or via any standard charger capable of accommodating Sony F Series type Li-ion batteries. This high capacity battery is ideally suited to semi-pro cameras like the Sony PD170 and the new high-definition HVR-Z1E. Due to technological advancements, the DVL-1 fully supports the information technology used by most modern camcorders, affording the ability to display remaining batteries time. Also available is the DV-C1 Li-Ion charger.

For more information visit www.hawkwoods.com or email the sales desk on sales@hawkwoods.com or call 01233 638715.
So you want to be a Steadicam operator?

Lancashire based Steadicam operator Jason Williams tells his story of how he got into the business and what's involved in the day-to-day work of a Steadicam operator.

For as long as I can remember the word “Steadicam” has been etched into my brain – how it all started, I don’t know, but for many years, I wanted to own and operate one for a career. The Steadicam system has been around since the mid 1970’s, around the time I was born, but truly came to life for the first time in the film The Shining in 1980 having previously been featured in the film Rocky in 1976.

Its inventor, Garrett Brown, had purposely designed a piece of equipment to remove the camera from the dolly, handheld, and cranes – basically putting all three into one extremely clever mechanical device. I have never met Garrett but I have friends who have, and from what I understand I think the world he has created has taken even him by surprise. From the humble beginnings he created, there have been many incarnations from different manufacturers, all based on the original Steadicam design (I now use the word ‘Steadicam’ as a generic term, more for the piece of equipment rather than the actual brand).

My fascination with Steadicam stayed with me for many years but I was unable to make my dream of owning one a reality due to the prohibitive costs of the equipment (a typical set up today costs around £25,000 to £30,000 and beyond). However, all this changed in 2001 when I came into some money, which I decided to invest in my first Steadicam system. I trawled eBay and found a cheaper branded alternative, which cost around £3,000 – a Basson (uses the same Steadicam principle with alternative materials). I bought this without much thought or insight as to how the system worked. When it arrived I eagerly ripped the box apart and checked out the various mechanical pieces in awe - a vest, an arm, and a long post. I already knew how to put everything together and spent hours playing with my new piece of kit; starting to understand the physics behind how it worked. I soon learned that wearing/operating it was physically demanding. The one thing that didn’t occur to me as an operator was the fact that I needed to know and learn how to work with the rig, to get the best out of it – I didn’t expect to put the vest on, fit the parts together and be able to fly like a pro – it takes time, and as plenty of other operators told me – “practice, practice, practice!”

I knew that the Basson would never have been good enough to use in a professional broadcast situation, but it proved a useful piece of kit whilst I found my feet. From using the Basson I gained a deeper knowledge of the skills and techniques required to operate such a stabilising device. I had to make some mechanical adjustments to the sled to achieve perfect balance with my camera and to make operation easier – this is one major factor with...
So you want to be a steadicam operator?

“copy” brands – the Steadicam brand has something known as “Dynamic Balance” and has a very complex formula, and once set up and balanced correctly the sled’s centre of gravity is an exact point, and when you spin the sled round, it won’t “kick out” at the bottom, instead it will stay perfectly vertical.

Certain “copy” brands do not use this, which can cause problems with horizontal line-up. At this point I thought I would never be able to buy and operate a genuine Steadicam brand system, so, for now, I carried on working with my Basson, though I never got any paid work from it.

Then it all changed, my wife gave me the opportunity to buy a used Steadicam Provid for just under £10,000. The day I went to collect the equipment ranks as one of the best days in my life, only topped by my daughter’s birth. Up until now a genuine Steadicam system had only been a dream, I knew that I would have to further my paid operating work if I were to invest this amount of money. So I decided to take a three day Steadicam workshop to familiarise myself with the Steadicam system and the correct techniques and skills to be able to use it to its full capabilities. I already knew enough to operate the Basson, but knew that investing some money in the three day course would further enhance my career prospects as a Steadicam operator. The three days I spent at the BBC Training Centre in Wood Norton were a real pleasure, sharing a passion with fellow operators and Robin Thwaites – the gentleman responsible for Steadicam UK.

It’s now just over a year since I attended that workshop and I have since taken on many paid jobs. I have worked with many camera formats including Betacam, DigiBeta, DVCAM and most recently 16mm film, which was a bit of a challenge, but one that I enjoyed immensely. I love having new challenges and fresh opportunities on the horizon, and I am always keen to learn and better my Steadicam techniques and find new ways of creating innovative shots. I enjoy every single second of being in the vest and pulling off a shot that the director requests – to be able to pull it off first time gives me a real buzz.

For anyone thinking of becoming a Steadicam operator, here are some tips I’ve picked up along the way:

Always attend a workshop, you’re better off learning the right way from the beginning, rather than picking up bad habits by trying to teach yourself. If you don’t you could also end up damaging your back – and that can put an end to any Steadicam operator’s career.

Before you shoot, check all your equipment for cracks or damage. Once the sled has the camera mounted, it can be extremely heavy; if the worse comes to the worse and the arm fails, the camera, and most likely the sled, will hit the ground very hard.

Walk through any shot before you put the vest on; make sure there are no obstacles you might trip on, or trees that may hinder the path of the sled. Safety is paramount for you as an operator; it’s your equipment and your health at stake; so never put that at risk.

If the Director wants you to do something you think is unsafe – DON’T do it. You understand how your equipment works and what you and your equipment’s limitations are. Never let a director bully you into pulling off that shot running down a hill at full speed – if you fall, you could do yourself, the camera and your equipment a lot of damage. If he is persistent, then you have the option to walk off the set and if he hires another operator, he will more than likely get the same response. Besides, most professional directors have a good idea of the limitations of a Steadicam operator and...
will respect their opinion and safety. It’s always advisable to have an assistant on hand who can help with the set-up, help you when you’re wearing the rig, and most of all, help when you are shooting. I always have someone hold the back of my vest, so if I trip, I know I can trust them to do their best to stop me from falling, or at least falling too hard. Make them fully aware of the shot and do a dry run with them so they can anticipate your movements.

Before you rush out and buy a Steadicam Vector or MK-V Alien Revolution for example, stop and think about all the factors involved. If it’s a career move, the cost of the equipment can easily exceed £25,000, so think very carefully. You also need to be relatively fit; never go over the top; if it hurts put it down! There are other factors to consider; if you live in or near London, you have the BBC, ITV, C4, C5 and other broadcasters around, you also have a lot of other Steadicam operators to compete with. The field of where a Steadicam can be used has been opened up massively over the past few years, including horse racing, music videos and television adverts – as long as there’s TV, there will be a need for Steadicam Operators.

Always take out insurance for your equipment and more importantly, liability insurance; some companies won’t hire you without it. Parts can be repaired, but they are very expensive, which is why insurance for your equipment is vital.

If you decide to embark on a Steadicam career, I can promise you it’s rewarding and highly enjoyable, but consider everything before you decide it’s the career for you.

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**Diary of a shoot**

This is a recollection of a paid shoot I did recently, which had lots of highs and lows. I picked this shoot in particular as I gained the most experience from it; the perils and pitfalls of Steadicam Operating, insights of what is involved with shooting on film formats and what lengths a director may go to to get the shot he needs. I also learned how rewarding and how much fun Steadicam Operating can be.

It was on this job that I was asked to do my first ever film shoot (16mm). I was very wary, as I had never shot on this medium before, plus they wanted a Remote Focus system, which I was also unfamiliar with; however, I have a friend who understood how it worked, and he gave me some pointers.

I was given very little information about the shoot, only that it would take place over three days, a Sunday evening, Monday afternoon and all day Thursday. Little did I know what I was letting myself in for.

When I arrived on the Sunday, it was around 4pm. I met the Director and DoP in Leeds. The shoot was some drive from Leeds in a small town called Knaresborough. We arrived around 5pm thinking we would be shooting soon after arriving. We were kept waiting...
around for several hours, then we were finally given the camera at 2am – I was annoyed to say the least (in the Steadicam world, 8 hours is a chargeable day). I got the camera mounted and balanced on the sled, then adjusted the arm for the different weight of the film camera. The shot entailed running up a slight incline with the camera “Don Juan” (sled turned 180° with the camera facing backwards). It was fairly simple, around 10 to 15 seconds. I practiced the shot several times over as I didn’t want to waste film and I was keen to impress the director and get the shot in the can on the first take. On my last practice run I cut it a little too close to the metal handrail that was on my route and sprung the Steadicam arm back. This sent me flying backwards, but thanks to my assistant, not off my feet!

My assistant and I checked the arm out and found some damage, which meant I couldn’t complete the shot at that point. We now had to waste more time travelling back to Manchester to get a loan arm to finish the shoot. We packed up shooting for the day and at 2.45am to get a loan arm to finish the shoot. We set off back on the long journey home. We packed up shooting for the day and at 2.45am we set off back home; phew!

The tricky bit was that he had to get on the train at the station before and travel down to the station where we were waiting. I had to wait by the platform, and hope we ended up at the right door that he would be getting off from. The first take didn’t go as planned, we waited around the mid section of the platform, but the actor got off from the rear of the train. I tried my best to pull off the shot from where I was located on the platform, but it had to be abandoned due to bad organisation of the shot. The next time we worked out which door he would get out of and had a better planned shot. He was sent back to get on the next train, which was about half an hour away. By now my nerves were getting the better of me – it was getting on and the light would fail soon; they had more shots planned – I had to nail it this time as there would be no more chances. The second train began to pull in – bingo, our position on the platform and our pre-arrangement with the actor meant we were in exactly the right place this time. The actor got off the train, and I followed him, walking backwards; second time around we nailed the shot and it was perfect.

The last shot of the first two days was the running shot we had abandoned the previous evening due to the damaged Steadicam arm. I was even more nervous about this shot as I didn’t want to replicate the same accident, so this time I made sure I had plenty of clearance from the handrail, and after some dry runs the shot was in the can. I felt a sense of relief and joy at getting it right this time! I had learnt a valuable and expensive lesson from this shot. If I hadn’t been careful, I could easily have missed the mark and ended up falling down the steps, the Director and I were very happy with the final result.

It was now the final shot of the night and my part of the shoot was fairly simple. It involved running up a gentle slope then panning towards a path and holding the shot. It was almost 3am, now the tiredness was really kicking in and the earlier run had taken its toll on my legs. I was keen to get this shot in the can in as few takes as possible. A few practice shots were done, and the director seemed happy with the results, so we went for a take. The first take went ok, but the director wanted another to be on the safe side. By this point I wasn’t bothered about hitting the mark, I just wanted to nail the shot and get the rig down; it felt like my legs were about to snap.

We wrapped just after 3.30am, I packed the rig away and set off back home; phew!

Jason Williams is a Lancashire based Steadicam operator who started operating in 2001. He spent 3 years learning the necessary skills and techniques required on a second hand Basson rig, then in 2004 he purchased a Steadicam Provid, which is now his work rig.

Jason has worked with most formats including DVCam, DigiBeta and Super-16mm film. He has been hired for various shoots and is currently working on a 16mm film.

For more information about Jason Williams you can visit his website at: www.steadivideo.com
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Cast your mind back seven years to 1999 when the DV revolution was in its infancy, the VX1000 was Sony’s consumer flagship camcorder and had leapt the fence to take the Broadcast and Professional world by storm.

Sony’s BVW400 full size analogue Betacam camcorder was taking a pasting by this young whippersnapper. The VX1000 was ‘digital’ and had something called flame-cable, some sort of digital connector – it would never catch on!

Whilst all this was happening Canon were sitting back with a concealed smile on their face, humming quietly to themselves and trying not to attract attention as they were plotting something really quite fiendish. Then they struck.

The Canon XL1 was definitely the first camera styled after a watering can, no wait, it also looked like a small chainsaw. Whatever it was it was most certainly visually striking. The XL1 started something quite remarkable, literally overnight the DV indie scene grew immensely. XL1 websites popped up by the dozen and suddenly the VX1000 lost its throne. The XL1 was the new kid on the block. If you were shooting on DV then you had to do it with style. How on earth could you be expected to look windswept and interesting whilst brandishing a VX1000 – which looked like a mere toy in comparison.

As the months passed the XL1’s reputation grew and more users were buying into it. With more cameras out there more people were starting to discover faults, problems with backfocus, limitations of the lens and an interesting issue where the XL1 would cause interference with the MA100 XLR adapter.

At this time a UK company called Optex released a manual lens based on a Fujinon 14x. The modification removed the 1/3” lens mount and in its place bolted a Canon XL mount. The XLPRO lens won the best of show award at NAB, it featured a back focus adjustment and both focus and zoom gear rings. The lens was a roaring success both in the USA and here in the UK with many hundreds of units being sold.

A short time later Canon released their...
own manual lens, which over the years has developed into the 16x Manual lens that they sell today. The manual lens wasn’t Canon’s only development.

In 2001 Canon was preparing to release the XL1’s replacement, much speculation bounced around internet chat rooms. What will it look like, what will it offer over the current XL1, it’s going to be spectacular…

When the XL1S was launched, to be fair it was somewhat of a non-event. In my humble opinion the XL1S looked too much like the XL1 (it was identical) and as such wasn’t going to cause the stir Canon had hoped for. Despite this, operators wanting to purchase the XL1 bought into the XL1S and a number of diehard fanatics upgraded their XL1’s to the XL1S almost straight away.

In 2004 Canon showed they had been listening and brought the world what we had been asking for, an XL2. The XL2 had built in XLR connectors, a gorgeous large viewfinder/LCD unit, real 16:9 and much more. But Canon still had a small problem – everybody was now buying Sony HDV camcorders.

At the time I ran some tests between a Canon XL2 and a Sony DSR500. Considering the difference in price the resultant images produced by the XL2 were dangerously good. But in the back of my mind was the new Sony Z1 HDV camcorder that I had seen at IBC. The quality was simply outstanding. Why would I go out and buy an SD only camcorder? I was not alone in this thinking and many people online were arguing over the merits of DV and HDV. At one stage a rumour surfaced that the XL2 could be switched to HDV by software at Canon service centres – rubbish!

Canon were aware of this, they knew you wanted a HDV capable XL2 and less than a year after its UK launch at Pinewood, Canon have quietly wheeled out the XL2’s big brother the new XLH1.

The first thing that will hit you about the XLH1 is its colour, Canon now realise that Black is the new White. The playful white body has given way to a hammerite like black finish that shouts business. To avoid the XLH1 looking somewhat like a zebra Canon have wisely decided to supply it with a black lens.

Now, I’m not an expert on paint but I’m betting someone at Canon was tasked with finding the right colour for the XLH1. For days, maybe weeks Canon’s Director of Paints and Finishings spent hours with his team sweating over a desk full of Dulux sample strips and miniature testers until they got the colour, look and feel that they were after. Can black paint be heavier then white paint? It certainly feels that way; Canon’s own take on Darth Vader certainly has the force. Otherwise the XLH1 appears to be the same as the XL2, but with a few notable exceptions, Canon have introduced ‘proper’ connections in the form of SD and HD SDI connectors, Genlock, TC in and TC out. These four BNC connectors are...
what Canon refer to as the Jack Pack, sounds like a bad cartoon to me. The jack pack lives on the side of the shoulder pad. Also gone is the red accent by the main mode control wheel. The XLH1 looks sophisticated with an understated black and silver finish. I’m still loving that paint finish.

The XLH1 has several new features worth mentioning. Some thought has gone into this camera. The supplied microphone may, to the untrained eye, look identical to that supplied on the XL1, XL1s and XL2, but now has a cunning switch to allow you the choice of Stereo or Mono function. The microphone sits on a shock absorbing mount – no more lens servo or handling noise.

Canon has also taken a positive step back to the XL1 with a body located iris wheel not a push up/down switch, which was dreadful. Adjusting the aperture on the XLH1, although not as perfect as an old-fashioned ring on the lens, has improved tenfold. Well done Canon!

The shooting mode select switch has grown an extra position and is lit with a natty blue LED ring when shooting in HDV mode. Two other positions offers you SD 4:3 and SD16:9. This switch is easily accessible and not hidden away below X number of onscreen menus.

Some may say (and have done so) that this switch can be easily knocked during operation. Well you’ll be happy to know whilst you are recording this switch stops working – even if you knock it from HDV to SD 4:3 by accident.

The XLH1 takes its formats very seriously, offering you the full monty of standard DV 4:3 and 16:9, HDV and even a 2.35:1 frameline generator allowing you to frame your next cinematic treat before cropping in post.

Unfortunately, because the model I received to test wasn’t a 100% final production model, it would be unfair of me to discuss the image quality, but if it is anything like the XL2 you won’t be disappointed.

Canon have done a great job with their latest XL camcorder, they are so close to getting it right. In my opinion the auto lens is the last fly that remains in Canon’s ointment. Every serious XL user I know wants a fully manual lens with end stops, back focus and marked scales.

To many, the XL series of camcorders are reminiscent of Marmite in the respect that you either love them or hate them. Personally I think Marmite is great, as is the new Canon XLH1.

The Canon XL H1 should be out in the early part of 2006 and is expected to be priced around £5,000. For more information on Canon and XL H1 HDV camcorder visit: www.canon.co.uk

Simon’s career in production equipment sales started when he left school at the age of sixteen. Fourteen years later Simon has his own equipment sales company, Production Gear Ltd. He enjoys filming, editing and flying power kites. Simon is married and lives and works in Potters Bar, Hertfordshire. You can contact Simon via email at: simon@productiongear.co.uk
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It was the swinging ‘60s when Ampex became the buzz word for the recording of video and audio. The tape was two inches wide and a mile long, while the machines were bigger than Grandma’s old piano. With clanking mechanics and hissing vacuum pumps, it was more akin to a steam train than a piece of electronic equipment. The valves glowed so hot that you could warm a frozen chicken pie on them for lunch. Editing was extremely difficult and only possible with razor blades and a magnifying glass … oh, and some iron filings.

There was also Ampex’s Video-Disc which came along in the ‘70s and with it the BBC TV ACTIONREPLAY (remember that caption?). With two 15-inch disks whirling around, the kit filled a room and boasted a capacity of 35 seconds of video recording, but no audio. Little did I realise then that I was looking at, in principle, a hard disk set up that would be running the world a few decades later.

Today my son can put a 60GB hard disk drive, courtesy of Apple, into his shirt pocket. At 25 Megabits per second, that could be four hours of broadcast-quality programming.

You might think that that is the ultimate way to record in the future – but I think there is something even better and potentially far more reliable.

No moving parts
It is the dream of any designer to make a machine that is totally reliable. The problem is that moving parts wear out, get dirty and sticky, humid air condenses on them, and they are subject to G forces, large and small. The result is variable performance.

The solution: make a recording machine with no moving parts. Panasonic has done it and it’s called P2. It is based on the worldwide success of the SD memory card and is set to revolutionise the way we gather news, documentary material and who knows what else.

[Ed. Note: The current range of Panasonic P2 camcorders include the brand new AG-HVX200 and the already established SPC700, SPX800, SPX900. The AG-HVX200 is the entry level P2 camcorder (though it is aimed squarely at the professional market) and is also the model here that records DVCPRO50HD, the remaining models are P2, but SD only. The AG-HVX200 will sell for around £4,995, this price will more than likely be a bundle including 1 or 2 P2 cards; the AG-HVX200 has two P2 card slots as well as a standard Mini-DV tape recording mechanism. The SPX (SD only) range cost between £11,000 and £18,000 and all have 5 P2 slots. All models record to the DVCPRO50, DVCPRO25 and DV formats. The AG- HVX200 (being the newest model to the market) also records to the DVCPRO50HD format; I know the HVX200 is the cheapest model, so this might seem a little strange, but this is simply how things have panned out (no pun intended).] Unlike a VTR, the P2 camera has no mechanism. That means
you do not wait for lace-up before the tape rolls, so you are less likely to miss that vital shot. There is a huge saving in the time taken to capture audio and video for editing. You simply plug the recorded card into your PC to edit (with the edit software supplied) or plug the cards into your edit machines, no digitising, no spooling.

It is useful to have the cameraman mark up the good takes by using the thumbnails of every shot. These are shown on the bright LCD display on the side of the camera and executed without damaging the recording, followed by an instantaneous return to clean space on the card to resume recording. The current 4GB P2 cards give 18 minutes record time at 25Mbps and consist of a 4x1GB SD package. Panasonic suggests that a total capacity of 128GB is not far away, which would ultimately give 144 minutes of DVCPro HD at 100Mbps.

The cards are hot swappable, which means they can be replaced as the material is being recorded. They are also incredibly robust compared to other media, especially tape. The rugged little units are tested to operate in temperatures from -20° to +60°C and can withstand forces of up to 1500G. Panasonic boasts that the connectors are good for more than 30,000 cycles and a card can be rewritten more than 100,000 times.

The downside

If you have used a digital stills camera, plugged the card into a computer, attached the images to an email and sent it across the world, then you’ll know how simple it is to do the same to broadcast-standard pictures and audio with P2.

Of course, there is a major downside: cost. Today a 4GB card costs almost £1000. As the camera has five slots, that makes the cards a substantial capital cost.

However, prices should drop dramatically. In the same way that the price of disk drives has fallen every year and capacity has increased, Panasonic say that 128GB cards are on the way (presumably for little more than today’s P2 card initially), giving the possibility of recording more than eight hours at 25Mbps. Even so, compared to tape, the cost will be greater, so you can never treat the cards as you would tape. They should be viewed simply as a way of transferring data from the camera to the edit suite.

Material can be archived economically on DVD.

Shooting Partners Trial at IBC

The IBC News breakfast show is distributed to delegates in 10,000 Amsterdam hotel bedrooms, over a satellite feed that can be seen in Europe, the USA and South America. It is also streamed on the internet and can be downloaded to mobile phones. The show is used every year as a live, practical test bed for innovative broadcast technology.

In September 2005, the Shooting Partners team, led by IBC news producer Sue Robinson and production manager Jenny Bigrave, chose to trial Panasonic’s freshly released P2 camcorder. It was the first time it had been used in the field by a high-pressure daily newsgathering operation over seven consecutive days. The production used three P2 camcorders, 24 x 4GB memory cards and two studio decks. I’ve listed below the major positives and negatives highlighted by the experienced industry professionals who used the equipment.

Comments from the cameramen:

• P2 proved to be an exceptionally stable format. We were not aware of any dropped frame issues over the entire operation, covering hundreds of clips over the seven days.
• The thumbnail menus were of great help when checking takes for any problem boom in shot, presenters words, etc.
• By using the displayed menus, it was possible to mark up the good takes, giving the editor a rough EDL. On top of that, we used the ability to attach a verbal note to the clip, which speeded the edit process and served as a production aid.
• The camera appears to be slightly heavier than a 790 Digital Betacam, which is surprising, although it is built to be tough, and tough it is. There is a very useful 10-second cache that is invaluable in a newsgathering situation.
• The pull-out display would benefit from an under-scan setting to ensure that the operator’s framing is on limits.
• The camcorder would benefit from having additional power outputs for extra lamps and monitors.
Comments from Master Control and editing personnel:

- The fact that thumbnails are available for every record start/stop helped enormously, especially for a high volume, quick turn-round, recorded news programme when there is not always time for accurate log sheets to be made.
- Being able to use markers on thumbnails to highlight such things as good pieces to camera, or the best interviewee answers, reduces a phenomenal amount of time on the edit.
- The fact that the P2 studio deck has the same basic functionality and operability as most other tape decks makes a migration to P2 an easy transfer.
- The access to instant footage is immediate, easy to use, and speeds the work flow.
- Ingesting from one card to a second card, it never dropped a frame, even when the footage came from another shoot on another camera.
- The ability to receive an MPEG-4 copy of the footage whilst the camera is still on location is truly a fantastic time saver, as is the ability to ingest to Avid at four to six times faster than real time. No loss of quality or any other misadventure, like chewed tapes, was experienced during this exhaustive series of broadcasts.
- We saved on 120 rolls of Digital Betacam tape during the five days shooting and editing.
- In future, archiving would be best and most efficiently completed using DVDs. The overall consensus was that this new technology is easy to use, will speed up workflow and will interface with the existing products and system infrastructures. It is a robust format that seems ready for market today.

Why go tapeless?
With solid state, there are none of the following:

- STICKTION: Condensation causes tape to stick to the heads. This can occur when a conventional camcorder is moved from a cool environment into a warmer (and humid) environment. Result: your camera shuts down for hours (time to get the hairdryer out).
- DROP-OUT: Grime from city traffic, sand from the beach, or dust in the edit suite can cause drop out. Unfortunately, by the time you know about it there may be no way to rectify the problem.
- HEAD WEAR: As tape passes the heads it gradually wears them down. Heads must be maintained and eventually replaced – which costs. P2 has no heads – minimising maintenance costs.

Advantages include:

- NO TAPES: No more creased or damaged tapes to worry about or purchase. No more broken cassette doors or loading mechanism abused in the haste to change the tape quickly. Or indeed damage to the recorded tape whilst viewing.
- INSTANT ACCESS: There is no spin time when viewing rushes as there is instant access to any part of the recorded material.
- NO TAPE TRANSPORT NOISE: The recording process is completely silent, there is no recorder noise. It is possible to have a camera mounted mic, although you might hear the zoom motors.
- DIGITISING TIME: You can edit directly from the cards using a laptop, or transfer at up to 640Mbps to other media.

For more details about Panasonic’s P2 cameras visit: www.panasonic-broadcast.com

Doug Hammond was a BBC cameraman for eight years. He became a Sports Producer/Director on Grandstand and ITVSport. Doug went on to Executive Produce the Wish you were here...? travel show on ITV and is now Director of Operations at the Shooting Partners Group.

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What is the difference between GY-HD100E and GY-HD101E?
The FireWire (IEEE1394) port on the GY-HD101 allows input as well as output of the digital signals HDV (High Definition) and DV (Standard Definition). The GY-HD100 will only output. This is the one and only difference.

Why bother with two different models GY-HD100E and GY-HD101E?
The EC duty rate is significantly higher for digital recording devices that have an external digital input port. JVC has consequently chosen to offer a lower cost model for those users who have no requirement for an external digital input. (In North America where there is no differential in import duty rates, there is just the one model available, GY-HD100U).

For what applications should the digital in and out of the GY-HD101E be needed?
Any user, who is thinking to purchase now or at some future stage JVC external hard disk recorder DR-HD100, would be well advised to invest in the GY-HD101, because this model allows the captured footage to be reviewed on the camcorder’s viewfinder(s).

What is the difference between the GY-HD100U and GY-HD101E models?
Basically the “U” is the model designed for the USA market and the “E” for the European market.
In HDV mode there is no difference in record and playback features.
The difference is ONLY in the Standard definition DV Mode.
The U will only record and playback in NTSC and the E will only record and playback in PAL. This also applies to DVCAM playback.

What other accessories are available?
JVC has produced a small compendium of accessories, both JVC and 3rd party, which is constantly updated. The lists include underwater housings, larger batteries, brackets to hold DR-HD100, cinematographic equipment, lenses and lens adaptors, carrying cases and many more items.
Please refer to Section E.3 of Aspects of ProHD, www.jvcpoeurope.com/prohd

Does it play DVCAM format?
Yes. The GY-HD100E will playback a standard definition PAL DVCAM recording on the mini-sized cassette. The desktop BR-HD50E Recorder/Player will playback PAL DVCAM in both mini and standard size cassettes.

Does the GY-HD100/101 record on DVCAM format?
No. There are two different formats in which the GY-HD100 and BR-HD50 will record. The first is in HDV mode and this puts down an MPEG2-based transport stream on tape. The second is a standard DCT compressed DV type recording, and is compatible with all current standard DV material and equipment.

Exactly what items are included in the JVC camcorder standard package?
• Camcorder (GY-HD100 or GY-HD101)
• Fujinon 16x zoom lens
• Microphone, detachable
• AC Adaptor/Battery charger
• L-ion battery BN-V428U
• Memory Card type SD16MB for memorizing up to 3 camera set-ups

Will DV recorded on a JVC deck also playback in a Sony DV player/recorder?
Yes. As noted above, the standard definition DV recording made by the GY-HD100 or BR-HD50 is compatible with all current standard definition DV equipment, and therefore will playback on any regular Sony DV player/recorder.

Does the 1080i provided by Sony’s HDV2 produce an improved image quality over JVC’s 1080i output?
The 1080i output from the JVC camcorder is a proper 1080 line interlaced output. However, it is sourced from a 720P/25 recorded image as this is the recording format used by the GY-HD100 & 101. It is arguable that progressive pictures are subjectively better than interlaced images and all
current flat panel displays are themselves inherently progressive. Progressive capture will not display the usual interfield flicker of an interlaced image as it is a frame based capture rather than a field based one.

Why are the new HDV cameras less light sensitive than many current DV cameras?
Whether 1080i or 720p, the CCD pixel count is much higher in HD cameras resulting in individual pixels being of a much smaller size than their SD predecessors, consequently delivering less output and requiring greater illumination.

Why is there no high gain Lolux circuit to improve the low light capabilities?
Many standard definition cameras have a Lolux facility which increases gain by over +30dB for shooting under extremely low light levels. However with this amount of gain, it does induce some considerable degree of noise, but for, say, news where the shot is very important and you cannot control the light levels, this will not be a real problem.
However, with HDV cameras MPEG-2 compression is used. This is necessary to reduce the extra data of HD, and so allow the same recording time on a tape for HDV as for standard DV. Because random noise is the enemy of compression, the gain is limited to a maximum of +18dB in the camera.

Can both the Viewfinder and LCD panel be on at the same time?
No. To conserve battery life only one can be on at a time. Initially the eye-piece viewfinder is on, and when the LCD panel is opened the viewfinder is turned off and vice versa.

Does the camera have external time code input? Can the TC or user bits be preset?
There is no external time code input. Time code and user bits can be preset using the menu screen.

What are the three User buttons for?
As the camera is small, to stop cluttering the camera with a multitude of controls, three assignable User buttons have been added, which can be configured for the cameraman’s own shooting preferences. These could be independently assigned, for instance, to any of the following: Colour Bars, Preset Temperature, a selection of different Black Stretch and Black Compress levels, or Auto Iris exposure trims.

How many camera set-ups can I save?
You can save 2 within the camera itself and a further 3 on the supplied SD memory card. When a camera setup is saved on the SD card, it can be transferred to another camera to ensure they are set up the same.

For more information about JVC and their ProHD progressive scan GY-HD100E and GY-HD101E HDV camcorders visit: www.jvcpro.co.uk

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**Avid Competition**

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Win a copy of Avid Liquid Pro version 7 complete with USB 2.0-enabled hardware for digital and analogue capture and output worth £640
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A: **Pinnacle**  B: **Apple**  C: **Matrox**  D: **Canopus**

If you know the answer visit: www.dvuser.co.uk and click on the Avid Comp link on the home page, enter your answer and fill out your details. All entries must be in by Tuesday 28th Feb 2006. The winner will be contacted and announced on Friday 3rd March 2006.
The Tour de Langkawi in 2005 was nothing new to me as an event, I’d already covered seven of these for VTV since 1998. What was new though was the fact it was the first time a nonlinear solution was going to be deployed. Fast turnaround sports are the last vestige of traditional linear edit suites – they are quicker to use and don’t suffer from crashes. An awaiting satellite feed and large Asian audience won’t wait for you to do a quick reboot. So with the full backing of my director and production company, my Final Cut Pro edit suite was flightcased up and shipped out to Malaysia for a month. Read on for the story.

I suppose the purchase of a brand spanking new 5.6 Terrabyte XserveRAID had provided the trigger for the possible use of FCP on the TdL. (Incidentally, if you ever buy one of these, don’t open the box it comes in from the top, pull the plastic lifting handles out of the side first. Interestingly, the unpacking instructions are packed inside the box!) Before the XSR purchase, I relied on a SCSI Medea RTS 480 and although this had worked without a hitch for 2 years, 5 hours of 10bit uncompressed just isn’t enough for a sports event that lasts 10 days. This leads to the nightmare of having to selectively delete clips as you go and believe me, it’s very frustrating when you come to make highlights at the end of job!

So, the 47 hours of storage the new purchase had made available were surely going to be enough to have landed on planet Neverdeleteanything. (If you are an Avid user don’t compare times as you are probably working in softer 8bit.)

The other trigger factor about using FCP was the Director’s push that we should move the coverage on a bit this year. For the last 7 years we had more or less used the same ‘format’ for the show. Now before you think we took a leftfield approach and did something radical, a cycling race has a start, middle and end and unlike a Tarrentino film, you can’t really get them out of order. What we did do though was use more colour pieces to break the action up. Malaysia is a beautiful, diverse and interesting country and the cycle race tends to cycle past most of it without stopping.

Enter Asha Gill, a Malaysian reporter/DJ/celebrity who the race organiser thought would do a good job of showing off her country to a wider audience. Now, although a lot of her pieces “would be run as a onner” to quote a famous TWI executive producer, there would be quite a bit of package editing to do. The show gets transmitted to an international audience at such an early TX time, one edit suite wasn’t enough to cope with the editing pressure, so a second edit suite was going to be needed anyway.

Now don’t get me wrong, although I love my FCP setup, I’m still a huge fan of editing on tape. Maybe it’s because I can put in a huge bill because the number of skilled VT editors is decreasing everyday, but it’s probably more the complete real time nature of tape and the lack of digitising & laying off to tape that does it. The man who invented pre-read was a complete genius, even though he thought it was only a cool way to see what you were recording over!

The Tour de Langkawi is rather a special event as the whole race is covered by ENG cameramen. Actually, to call them that is a bit unfair as sitting on the back of a motorbike...
trying to film a cycle race in the rain is not an easy task. However, when the sun shines you get a tan, something us edit suite dwellers never get the opportunity to do, returning from a foreign job looking the same colour as we left. My friends down the pub have learnt a long time ago not to ask if the weather has been bad when they see me for the first time in a few weeks.

There are three motorbike cameramen who work on the TdL, cunningly called Moto1, Moto2 and Moto3. The idea being Moto1 stays with the leaders, Moto2 stays with the chasers and Moto3 is at the back of the race mopping up stragglers or shooting ahead and waiting for the race to go through to film “pass bys.” There is a lot more to covering a bike race than that, but let’s leave it there so I don’t blow a load of hard earned trade secrets in a paragraph!

The quickest way to edit these down into a transmittable programme in a short time is to have a tape suite with a digibeta deck for every Moto (let’s face it, anybody could do it in a week; doing it in 4 hours is a bit trickier). Traditionally that’s the way the half an hour highlights had been made. Oh another thing to chuck into the equation is that we also have an OB van with 5 cameras covering the finish as the bikes have to divert for safety and of course the tapes from the helicopter.

So you can see if you wanted to cut all of this on a non linear, you would probably still be digitising when the TX time arrived. So this year we actually had two edit suites, my FCP setup and the four machine digibeta suite manned by my colleague, editor Rob Blake. It would be a case of mix and match, use each suite what it’s good for, fiddley bits on non linear, long racing chunks on tape.

Getting the kit there

The actual logistics of getting the kit there, the carnet and through customs was, thankfully, handled by the production company. Although my kit regularly goes out on OB’s, it’s normally been in the soft brown flightcases, ok the cardboard boxes it came in. Time to get everything flightcased and luckily I happened to live close to the Flightcase Warehouse who did a superb job of measuring everything up. My G5 is actually this one in the picture!

Dead, completely dead. No noise, no happy lights no anything. Never mind, what’s the first rule of fixing anything technical that’s not working after it has been moved? If you said reseat all the boards that’s exactly what I did, three times. Still completely dead.

Feeling slightly sick I decided to turn my attention to the G5. Well, the power light came on and I could hear the fan, but no display. Not what I’d hoped for but one up on the XSR. I use Motion a fair bit (A review of Motion1 here if you’ve hadn’t read it already) and because of this I bought myself the Nvidia 6800 Ultra. Slide the G5 door off and a resounding click of the GPU beast back in the PCI slot bought the G5 into life. Another reseating of the two power supplies, two fan units, two controllers, two battery backup units and all 14 400gig drives of the XSR was not so fruitful, still dead. Only one thing for it, head to the bar.

If you’ve ever met me in a bar, you know I like the odd beer or two. Apparently that night I was particularly bad company as there was one thing on my mind; the now defunct XSR.

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I got back to my room and decided to have another go at trying to fix it before I threw it out of my hotel window. Which would have been a real challenge for the robustness of the Apple metalwork as I was on the 32nd floor.

Having removed all the things I could remove from the unit, I decided to take it to bits and see what had happened. My worry was that the PCB that runs perpendicular to the drives had cracked. If it had I would definitely have no means of propulsion up that famous waterway. Quite a few screws later, I had the lid off, problem found.

If you are familiar with the XserveRAID, then you will know it has RAID5 protection, redundant power supplies, redundant coolers/blowers/redundant battery cache and dual fibre channel controllers. It has however only one ribbon cable connecting the power switch to the PCB and at the switch end the ribbon connector had fallen off.

The thing up at last. Bed.

**Pre editing**

So if the race starts in Langkawi, why have you got your kit setup in a hotel room in KL? you might ask. The decision had been made to edit the titles and associated stings out in Malaysia so it all could be wrapped into the same budget. What we had done though was predigitise the previous 8 years archive tapes so we had some footage to use. It was the 10th anniversary tour after all.

I was using two 23inch Cinema displays and unfortunately the second DVI to ADC adaptor that I’d ordered through the Apple Store had failed to find/reach my door before I had left for Malaysia. The Nvidia has two DVI outs. Through Apple Europe (Thanks Dave C and Peter Barber in Singapore), I had been put in touch with the local Apple Reseller & maintenance company. (Just in case anything went wrong!) Mazlan from Axis Computers very kindly dropped the new adaptor into the hotel and as he had never seen (and nearly didn’t!) a 5.6TB XSR before wanted a picture of him next to it. Interesting, he used to work for the Petronas Towers and said that the whole building had only a 2TB RAID to service the operations of the buildings. If you are not too hot on the tallest buildings in the world section of Trivial Persuit, The Petronas Towers in KL were the tallest until the completion of Tapei 101 in Taiwan. The now “Tallest Twin Towers in the World” stand at an impressive 491m - I only know this as I see it written everyday on my “twin towers” fridge magnet. An interesting benchmark for storage capacity outside of video files though.

Mazlan also had a laugh at the power switch story, but as he remarked there was little he could have done to help as there were no spare parts for the 5.6TB version in Asia.

So titles made, the next job was to install the kit into a converted bus for the tour. This
Bus would then drive to the start of the race on Langkawi, then move to the finish each day in the mornings. The bus was stationed at TV3, the "host broadcaster" for the tour and after a few hours everything was in place and working. The screens, monitor, & digibeta would all travel in flightcases on the floor. Now, it takes about an hour to get up the coast in a plane from KL, it takes considerably longer by bus and ferry. This gave rise to the problem that we had a day and a half on Langkawi before we could do anything, oh no! I expect you think the next paragraph will be how much sunbathing we did and how much alcohol we managed to consume, well it would have been apart from two things.

The Tsunami had hit the coast of Thailand & Malaysia just over a month ago and although Langkawi had managed to escape the big wave because of its sheltered outlying islands, there was still a slightly unnerving feeling on the island. Langkawi is so close to the Thai border, yet all that happened was a bit of flooding. Instead, the owner of the Oasis beach bar told the story of how she and her staff were laughing as they had to recapture all the chairs that floated away. When the water had subsided, her dancefloor had been completely washed away and that's where we are standing in this photo.

The second reason why my memories from the Tour this year are sad is that we lost a colleague a month after everybody returned. He's the one with the stripy trousers on the bottom right. Glenn Wilkinson had been on every Tour since the start, he had also been on the Tour de France since Channel 4 started covering the race. An exceptional cameraman and all-round nice bloke; a tragic loss at 44. I was on my own in a restaurant in Helsinki when I got the phone call he had died, looking out across a cold snow covered car park, that photo on the beach seemed a long, long time ago.

**Back to the race**

Well, it all worked and worked very well. I'm afraid I haven't any stories of edits from hell or further computer engineering feats. What it did enable us to do though was to polish up the beginning and end of each of the shows. FCP allowed us to incorporate more graphics from the networked Viz and do some nice transitions such as customised wipes with a travelling animation. Motion paid its airfare too, allowing the creation of graphics with video embedded, something that would have taken too much time in a traditional suite.

I suppose the only problem we had was the bus and equipment not turning up! The first day on mainland Malaysia proved to be somewhat fraught as the two edit suites were stranded on Langkawi due to the fact the ferry had missed the tide. One OB truck that couldn't get to Langkawi in the first place because of its size & weight was positioned at the finish already. That was to be our only facility for that day. Paul Ryan who does an excellent job as technical co-ordinator for Sunset & Vine had to go into the maternity hospital where the truck was parked to ask permission to set the commentary position up in their covered corridor. I won't detail the entire story, but I'll just say he had to barge in on the senior doctor who was inspecting an expectant mother at the time. I'll let you sort out the mental picture!

Well, we made air and the show looked ok even though all the editing was done machine to machine with no proper audio monitoring. TV3 did a sterling job of driving two more digibetas up from KL and wiring the OB truck up for the extra workload. The downside was that we had to remake the show with all the trimmings for the international version that gets syndicated round the world.

Job done, it was time to head home after a month away. Our last task had been to edit an hour's highlights which was going to be shown on Channel 4 a couple of days later. This would be voiced by one of the commentators, Phil Ligget back in London. By exporting a burnt in timecode DV copy of the show, it meant that the script could be written on the plane on the way home. Pretty cool and it also gave us an extra half a day's shopping in KL!

Back in the UK, it was time to unpack the kit and power it up for my next job. Guess what, get the XserveRAID out of its new flightcase – (which incidentally took only four hours to make on the eve of Chinese New Year) go to power it up and yeup, you've guessed, nothing! This time I went straight for the screwdriver and took off the lid. The ribbon cable was still attached to the power switch, but it had fallen off the other end!

My final line is that because the FCP experiment proved to be such a success, the decision was made to use FCP & Xsan for the ITV coverage of The Tour de France, but that is another story, take a look at:

www.apple.com/uk/pro/video/tourdefrance

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Peter Wiggins is a high profile broadcast editor working on non-linear & tape edit suites. He also owns a 10bit ‘fully loaded’ Final Cut/Motion/Shake edit suite. In between editing he also manages to squeeze in consulting, R&D, beta testing & writing. www.peterwiggins.com
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1. Sound
That’s right, many people ignore sound, or give more thought to the images, this is a mistake. Your eyes are a lot more forgiving than your ears, which is why you should ALWAYS prioritise the quality of your sound track. To help ensure professional quality sound: ALWAYS set the sound manually. Using your camcorder’s Auto-Gain will cause the audio levels to drop suddenly to compensate for sudden noise levels, the levels then creep back up again NOTICEABLY once the loud noise has passed. Auto Record Levels should be avoided at all costs. However, there are a few exceptions to this rule i.e. if you are filming a one-off event of say an old building being blown up and you have no idea of what the levels of the explosion will be.

2. Exposure
Correct exposure is vital for good footage. To ensure you get correct exposure, ALWAYS use your camcorder’s manual settings. This will ensure that your camcorder doesn’t “Hunt” in auto-focus mode, or “Shift” the depth of field or exposure brightness during auto-iris mode.

3. Composition
Obey the “Rule of Thirds” and your shots will take on a more Hollywood look. Don’t just plonk your subject in the middle of the frame, this is dull and unimaginative. Too many people don’t give enough (if any) thought to composition, though without it your shots will be ruined. Look at the scene from different angles, walk around and try and compose the shot in a creative and artistic way.

4. Track – Don’t Zoom
Avoid zooming at ALL costs. Zooming in and out will make your audience feel sick. Professional filmmakers don’t zoom; instead they Track, Push or Dolly, but never zoom. Zooming is for lazy people, don’t be one of them. Treat your zoom lens like a set of prime lenses and not the gimmicky zooming feature that many beginners mistake it for.

5. Steadiness
Shaky camcorder shots will make your audience feel nauseous. Use a tripod whenever possible to help ensure that your shots remain steady. Watch some of your favourite Hollywood movies; not a shaky shot in sight.

6. Use a monitor
Use a monitor whenever you can to aid in the exposure and shadow detail. Remember that your eyes see a scene differently to the camcorder’s CCD chips. This is especially important when you are placing lights. Always check the effect on a monitor.

7. Matte Box
ALWAYS use a Matte Box with a French Flag. The poor excuse for a lens hood that came with your camcorder does not count, throw this away and buy a decent Matte Box and learn how to adjust the French Flag properly. This must be set to within a centimetre or it will lose it’s effectiveness. The Matte Box is by far the most overlooked camcorder accessory, yet it is absolutely vital in the aid of professional looking footage. The Matte Box should be used both outdoors and indoors in a studio-lit environment. Apart from reducing reflections it will give your footage better contrast (helping achieve nicely crushed blacks) and nice deep colour saturation.

8. Polarizing filter
This filter will help reduce reflections when shooting foliage in sunlight, especially when using DV formats. Without one the sparkly reflections off the leaves will look bleached out like white dots, the polarizing filter will reintroduce detail. The polarizing filter will also add depth and three-dimensionality to cloud formations in a blue sky.

9. Make-up
Use make-up on your talent, especially when working in a studio environment under hot lights. There is nothing more off-putting than a presenter’s sweating forehead or shiny nose. All good Lighting Cameramen carry a small make-up powder application brush with some powder. This is especially important if your talent has a bald head, as it can look shiny and red under the lights.

10. Crossing the Line
Don’t do it. When you “Cross the Line” it will confuse your audience, they won’t know where they are in the scene. Here is an example of how confusing it can be if you cross the line. Imagine you are filming a local school football match cup final. You film the first half, then at half time you move your camera position to the opposite side of the football field. When you play back the final edit, it will look like the two teams never changed ends at half time and are kicking in the same direction as they were in the first half – hence, crossing the line.
Whether you’re looking to shoot home movies, independent feature films, corporate videos, music videos, TV commercials or weddings, today’s advanced digital camcorders allow you to carry out these productions more easily than ever before. The camcorder most suitable for you will depend on two things: how you plan to use it, and how much money you have to spend. The following brief overview will introduce you to the many different digital camcorder formats available on the market today from the consumer Mini-DV format right up to the professional broadcast HD formats and everything in-between. Please note that the following list is not necessarily in order of format quality.

**MINI-DV (JVC, Canon, Sony, Panasonic)**
A 1/4-inch ‘evaporated metal’ digital tape format officially introduced for sale in 1995. In 1994, more than 50 companies and various manufacturers agreed on the Mini-DV format. Sony was the first to develop a Mini-DV camcorder one year later. Mini-DV camcorders provide what is arguably the best quality of all of the home video formats, capable of recording high quality video with 520-line horizontal resolution. Mini-DV camcorders and decks are compatible with most video editing software applications for Apple Mac and Windows computers. Transferring footage from the camcorder to the computer is done via FireWire with many Mini-DV camcorders making it possible to transfer your edited programme back from the computer to your camcorder using what is known as DV-in.

**PROFESSIONAL DV (JVC)**
Professional DV is basically Mini-DV maxed out. It is Mini-DV at its absolute best with features usually only found on much higher format cameras. It is JVC using the standard DV format to address the needs of professional users. Rather than create a variation on a format, JVC opted to perfect the original format, above all delivering it with professional features in terms of TC and hardware design and additional circuitry in order to meet professional needs. See current GY-DV5100 camcorder and recording decks BR-DV3000 and BR-DV6000, which take both the standard size and the Mini-DV tapes.

**DVCAM (Sony)**
Sony’s hugely successful professional version of the DV format but which use a higher-specification recording system to produce pictures that are acceptable to broadcast TV channels and professional video producers. DVCAM is basically the grown up professional brother of Mini-DV and has established itself as the industry standard format for ENG, video-journalism, expedition and much documentary camerawork, whilst the smaller PD170 model has established itself as a favourite amongst independent filmmakers because of its compact size, superb picture quality and affordable price tag. DVCAM tape is more durable, it’s more resistant to stretching and dropouts, it’s more precisely manufactured and it’s been specifically designed for professional applications. Sony’s DVCAM uses higher tape speed that is 1/3rd faster than Mini-DV.
The DVCAM format has a track pitch of 15 microns whilst Mini-DV has a track pitch of just 10 microns. DVCAM uses the same compression system as Min-DV, recording at 25Mbps onto tape.

**HDV-1 Progressive (JVC)**
HDV stands for High Definition Video (although some refer to it as High-Def DV). The HDV format uses a Mini-DV cassette with the same tape size and mechanical recording system as DV, but records using the MPEG-2 compression codec. HDV is to the HD world what Mini-DV was to the video world back in 1995. HDV is the new consumer variant of professional HD and should not be confused with the latter. HDV uses the MPEG-2 compression codec, whilst high end HD formats do not. HDV™ is the trademark of a video format specification established in 2003 by Sony Corporation and Victor Company of Japan (JVC). The specification allowed for two varying implementations of the same standard, with HDV1 being the progressive implementation (720p) and HDV2 (1080i) being the interlaced one. The 50Hz variants of 720p, set out in 2003, include 720p/50, 720p/25 and 720p/24. Currently JVC has delivered the latter two with its first camcorder the GY-HD101E.
HDV-2 Interlaced (Sony, Canon)
Basically the same as HDV-1, but uses the Interlaced scanning method as opposed to Progressive. HDV-2 also uses a Mini-DV cassette with the same tape size and mechanical recording system as DV, and again, it records using the MPEG-2 compression codec, only to a 1080 line interlaced high definition signal. The 1080i signal is superior in quality to the standard definition of 625 lines. HDV uses the long group of pictures (GOP) algorithm encoding system to achieve very high picture quality at the same 25Mbps data rate as DV. HDV is fast becoming the format of choice for those wishing to shoot professional-quality video footage, not least because it offers the choice of HDV or DV recording on a Mini-DV cassette. It is almost certain that both HDV-1 and HDV-2 will make the standard definition DV formats obsolete over time.

XDCAM (Sony)
XDCAM is a professional digital optical disk recording system introduced by Sony in 2003. It features tapeless (non linear) recording of DVCAM or MPEG IMX video data, which is recorded onto an optical disc similar to a Blu-Ray disc called the Professional Disc, which holds about 23 GB of video data. The XDCAM range includes cameras and decks which act as drop-in replacements to VCRs. Via IEEE 1394, these decks can also serve as random access computer drives for easy import of the video data to NLE systems. The XDCAM format uses multiple compression methods: MPEG-2 when recording in MPEG IMX compressed data at up to 50Mbps, or DVCAM data at 25Mbps. Most XDCAM camcorders can switch from one compression to the other with the flick of a switch. In its 50Mbps IMX mode XDCAM records at a quality similar to Digital Betacam with eight audio channels, whilst giving huge workflow benefits in terms of its ‘file based’ structure, making it perfect for even the highest quality TV productions. DVCAM allows the user to record twice as much footage and maintains compatibility with a large amount of low end NLE’s. MPEG IMX can record at a bitrate of 30, 40 or 50 mbits per second, while DVCAM records at 25mbits per second. The low resolution proxy records at 1.5 mbit with 64 kbit for each audio channel.

XDCAM HD (Sony)
XDCAM HD is the High Definition version of standard XDCAM. XDCAM HD combines High Definition picture quality with the attractions of non-linear, file-based production, XDCAM HD records true 1080-line HD pictures using MPEG Long GOP encoding at a selectable bit-rate of 35, 25 or 18 Mbps. XDCAM HD offers all the workflow advantages of its Standard Definition sibling at a price that's within reach of corporate programme makers and regional broadcasters. XDCAM HD records onto the same optical disk media as XDCAM, giving the same non-linear style workflow and file management benefits in the HD world.

DIGITAL BETACAM (Sony)
Sony’s professional Digital Betacam is a videotape format that is mechanically based on the Beta tape transport. The recording on a Digital Betacam is component digital video with four channels of digital audio. Digital Betacam has been available in Europe as a 625 line PAL machine since early 1993. It has been the mainstay of quality broadcast production for many years. Digital Betacam uses 2:1 DCT based compression and high data rate combined with a rugged and well proven tape recording system. Many thousands of VTRs and camcorders are in action across the world. The latest DVW-970P model was introduced mid 2005.

HDCAM (Sony)
High quality 1920 x 1080 pixel cameras using very efficient compression technology to record a high data rate (approx 140Mbp8s) using the tried and tested tape recording system proved by Digital Betacam. A combination that has proved successful on many feature films, high profile dramas, and wildlife films across the world. HDCAM is the camcorder of choice for the very highest production values. The HDW-750P model is revolutionizing European TV production, while the legendary HDW-F900 is a Hollywood favourite for films such as Star Wars: Episode II and Once Upon A Time in Mexico.
DVCPRO (Panasonic)
Introduced in 1995, Panasonic specifically created the DVCPRO family for ENG use (Electronic News Gatherings), with better linear editing capabilities and robustness. DVCPRO is Panasonic’s universally adopted professional variant of the standard DV format. Running at the same data rate (25Mbps) as DV but using 4:1:1 sampling, wider track pitch of 18 microns and uses another tape type; metal particle instead of metal evaporated. Audio is only available in the 16 bit/48 khz variant. DVCPRO is synonymous with newsgathering and cost-efficient digital video production around the world. From independent production to event videography, DVCPRO is delivering superb results day-in, day-out.

DVCPRO 50 (Panasonic)
DVCPRO 50 is often described as two DV-codecs in parallel. Offering significantly less compression artefacts, and a better colour resolution (4:2:2) then that of DV or DVCPRO. DVCPRO50 records video data at 50Mbps, DVCPRO50 is the next step from standard DV family of formats since it addresses the most evident DV shortcomings in colour resolution and compression artefacts, that make standard DV less suitable for compositing and other colour-intensive tasks. DVCPRO50 was created for high-value ENG compatibility. The higher datarate cuts recording-time in half, but the resulting picture-quality from DVCPRO 50 is reputed to rival Sony’s Digital Betacam.

DVCPRO HD (Panasonic)
DVCPRO HD uses four parallel codecs and a coded video bitrate of 100 Mbit/s. Compression ratio is approximately 7:1. Panasonic’s DVCPRO HD technology offers broadcasters and filmmakers unmatched quality, reliability and price-performance as well as 4:2:2 Digital Component Quality. The DVCPRO HD sits at the top of the DV family of codec’s thus you start your production chain with high-quality 100 Mbps 4:2:2 digital component video. With this low level of compression, edit processes are sped up and simplified saving time and money. A camcorder using a special variable-framerate (from 4 to 60 frame/s) variant of DVCPRO HD called VariCam is also available.

P2 (Panasonic)
The Panasonic P2 Series is a growing system of professional broadcast video products, which utilize solid-state memory instead of tape for recording video. P2 stands for “Professional Plug-in,” referring to the removable flash memory cards, which plug into slots on P2 equipment. A solid state recording system, recording DV, DVCPRO, DVCPRO50 and DVCPORO HD compression formats on a robust, reusable recording medium whilst giving huge workflow benefits because of its ‘file based’ structure. The Panasonic AG-HVX200 is a compact, portable 3-CCD P2 camcorder capable of recording high definition video in the DVCPRO HD format (among other formats). The AG-HVX200 is just one of Panasonic’s P2 camcorders; also available are higher end shoulder mounted models.

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