

Digital Films: Notes on Tools and Process

by Eric Solstein, DMZ

Introduction - Before DV

I used to love Hi8. It was the first truly compact high performance format. I remember looking at my first Hi8 test footage and thinking how it was nearly the equal of BetacamSP. I was wrong of course, and it didn't take all that long to realize it.

It was 1989 and I was traveling through the parched Northeast of Thailand with my trusty Sony EVO-9100 Hi8 camcorder. It was a mean little machine that was empowering me to do a long and studied doc about U.S. veterans who had settled in Southeast Asia, guys who would turn their back on a big ole Beta rig and wouldn't dream of talking to a punk from New York until we had shared at least a half-dozen bottles of beer or a bottle of cheap Mekhong rice whiskey.

I shot about 60 hours of tape, some great stuff, but now that I had lived with it, every imperfection screamed at me from the monitor. The dropouts were atrocious and they seemed to get worse every time the tape was played. Careful viewing was no longer required to see the soft, noise, misaligned chroma or the ratty looking tattered edges that are that part and parcel of the Hi8 look.

Indies suffer, but we rise to the occasion. Good, bad or ugly, Hi8 was ours and we were going to do great things with it. At my company (then ESPI, now DMZ) we embraced it, delivered seminars to our peers in how to wring the most out of it, even found ourselves a lucrative niche, performing bump-ups for the networks. (They didn't bite the bullet on Hi8 equipment until the war in Iraq finally "legitimized" the format).

Some adventurous souls actually took Hi8 to the silver screen. Artist/filmmaker Ari Roussimov came to me for post-production help. He had shot an astounding Hi8 feature with his Canon A1, painterly and witty and truly unnerving, "Trail of Blood" premiered at Anthology, having been transferred to 16mm via a kinescope at some lab in Detroit. The print didn't look good but the sound was truly awful, simply unacceptable.

There had actually been a few studio projects that originated in video, even in those bad old days, "Richard Pryor Live" springs to mind, but "Hoop Dreams," still stands out as the first breakaway indie video to film success story. Shot in both BetacamSP and plain vanilla Betacam, it was transferred to video by the legendary Image Transform in Burbank. Now known as Four Media Company, they have since gone through many changes, but you can still enjoy the same process of EBR to 16mm red, green and blue separations, optically printed to 35mm.

My film about expats in Thailand still languishes on my shelves, but that's another story. No doubt, little bits of oxide are flaking off my originals at this very moment.

Part 2 - Digital Hits the Streets

Our ambitions bring us satisfaction while our "day job" puts food on the table. I am lucky, I like making media and no longer have to schlep that big U-matic deck around at weddings and Bar Mitzvahs. In November of 1995 I got a plum industrial assignment: a trip to China for a large American corporation and they were sold on digital video. I had already committed my organization to DigiBeta (the first and still foremost portable digital video format) and was prepared to shoot the Great Wall in 16:9 with an amazing new camera, the Sony D700WS DigiBeta Camcorder. A wide screen camera required a wide screen capable monitor, so I went off to B&H to pick one up. While waiting for assistance, I spotted a strange silver camera on their shelves. The VX-1000 MiniDV camcorder was the 6mm digital format that I had been hearing rumors about for two years. I bought one immediately.

Two days before our scheduled departure our company contact informs us that the Chinese will not issue a permit for the transport of a professional video camera: no digital video, no go. The solution was obvious, we purchased another VX-1000 and then proceeded to scrounge up every battery and bit of tape stock between New York and Philadelphia.

We had a sweet honeymoon with MiniDV, our client was blown away with the coverage and we even caged the cover feature in Video Systems Magazine. When I returned to New York, I sold all my Hi8 gear immediately.

I may occasionally be full of shit, but there are some things I do well enough to consider myself beyond the mundane individuals. One of them is looking at good video monitor and seeing things that others cannot see, generally bad things. This talent will rarely help someone make friends, but who wants a sloppy key, greenish blacks or pinkish whites? The real difference between how two people look at a monitor is an issue well beyond that of individual taste (which we all suffer from).

I knew enough to know that while a VX-1000 was a great camcorder, it only made good pictures. What the DV format was capable of in image quality could not be fulfilled by the DVX-1000, or any camera near its price point. There are many weaknesses in this arena, contrast handling, video noise and difficulty in focusing, being the most significant. (Note to XL1 owners: get the b&w viewfinder as soon as possible, you will make much better pictures when you have a vf you can actually focus with).

We finally got a fat juicy Sony DSR-130, no longer able to travel light, but getting much prettier, much sharper, wide screen pictures. We also carry a PD100A for B-roll, freaky shit and second camera coverage. (Beware: these little cameras frequently suffer from pixel dropout, and an unmoving white pixel is definitely not cinematic).

I want wide screen video, but only from a real wide screen chip, anything else is a kludge. What do you get after you discard nearly 1/3 of your camera's already limited resolution and then stretch what's left with the camera's own jack cheap \$3 integrated circuit... not a lot. You can do better, at least you can stretch it yourself. Maybe you don't even have to stretch it very much because the material can often sustain some minor aspect ratio twisting, in other words, treating a normal image as if it were already squeezed wide screen material.

I ran out before a shoot and bought a \$700 anamorphic front lens device from Century Precision. A handsome piece of glass, but what a problem. So difficult to focus, so susceptible to flare, a pain to align, it limits your zoom range, and it had to be kept ultra clean because it showed every speck of dust in sharp focus... the image was pretty soft though. Maybe you get the sense that I didn't love it, certainly not for gun and run; it is much better suited to the controlled lighting of narrative production.

Of course content is our number one concern, but there is plenty of pleasure in creating beautiful images and in the careful craftsmanship that can complement our spontaneity. Careful lighting and camerawork can contribute more to the ultimate beauty of your 35mm print than any other single factor, generally including your choice of camera. Of course a better camera will always offer more options to the craftsman and always make a better print, all else being equal.

Part 3 - After the Camerawork

There is another critical choice that can elevate or even salvage a film and the resultant print. I am speaking of the on-line, or conform, or finish, or mastering... the final edit, that you may eventually ship off to some strange city where they will transfer it to film. This is the wrong place to economize. You need color correction. You need contrast control. You need an impartial set of very well trained eyes and very lithe fingers to make your intentions read true. Just think about it, your master is by far the most significant document of your visual intentions... what else is there?

Why did you go to the trouble of even a single image tweak if not to further your intentions (and who knows how far you may yet go?)

This may be an appropriate time to point out that this is all your transfer facility has to go on. Fidelity to the video master is a very real consideration in evaluating a transfer facility. If you want rich chroma or pastel tones or pale skies or shadows rich in detail and contrast, put it in your video master. Your master will soon be film, and film is just different in so many indefinable (and definable) ways from video that it will certainly have been transformed, but it should still reflect your expectations... you made those decisions with great care, didn't you?

Do get them to do a test, or try to find someone else's test. Look at the video source material before you evaluate the transfer. Try to be as methodical as possible or at least understand which variables are beyond your control. (The choice among print stocks and timing can be controlled if you insist on receiving the test negative... you may also want to possess and control the negative from your eventual transfer but this is not so easy at every house, be forewarned).

Try to compare on a scene by scene basis rather than sequentially viewing tests composed of many scenes. It is very difficult to evaluate from memory. Keep in mind how they treated you, the flow of information back and forth. If they have not impressed you with their care of you and your image during the testing (read "sales") process, how much more effort will they put in once they have your money? *The motivation to excel can be influenced by the proximity of film maker to laboratory, particularly when one has problems to resolve.*

One last caveat to the testing process. You will be blown away the first time you get a test back. Sitting in that screening room, seeing your little 4:3 video blown up to the size of a room is going to cause your jaw to drop. Take that experience with a grain of salt. There is limited information in one test, and if you are shopping laboratories, you really owe it to yourself to try at least two facilities. You will be amazed at the differences.

What else to look for in your tests? Shadows! Do they block up into masses of indistinct darkness or reveal subtle detail? Highlights and their thresholds with darker material should not display aliasing (blocky) artifacts or streaks and should have the same delicacy of tones as your original video.

Harsh outlines? If they were on your video original, they were caused by your own camera's enhancement circuitry and in most cases you will now have to live with them. If not on your original, they were probably the result of the up-rez and enhancement processing at the transfer house prior to film recording. A definite no-no. Misaligned chroma and luminance (a grayish uncolored area at the one side of colored objects) is another common problem to be aware of.. By the way, why not invite your DP to evaluate these tests?

Please note, I haven't even discussed resolution or motion interpolation or sound issues.. isn't your head hurting already? I hope to expand this article soon, so check back.

One more suggestion for now, try not to wait until the week of Sundance to arrange your transfer.