

# New look for summer

The new series of *Last of the Summer Wine* is going to be shot on the Grass Valley Viper. **Dan Mulligan** details the tests he carried out and outlines his reasons for choosing this new workflow.



The Viper tested on location for *Last of the Summer Wine*.

Well here we go into a new series of filming for *Last of the Summer Wine* for 2006. Last year (2005 filming for 2006 airing) we shot using a Sony HDW750P at 25fps/PsF at 50Hz shutter. This produced some startling images, and some not so startling. With this in mind I approached the production in January 2006 about the possibility of using the Grass Valley Viper Filmstream Camera. Here are my reasons for reaching this decision. These thoughts, I might add, are for this production and its filming style, not for all drama shoots or otherwise.

The ideas for such an approach stemmed from the Sony's response to highlights. It coped well with cloud detail but had a massive problem with close quarter highlights – shirts, windows, etc. Researching this further it was clear that the heavy compression used by the 750P's in-camera recorder afforded little room for manoeuvre when grading (3:1:1 tape compression) and limited colour space (4:1:0) to push the colour around with. This left the problem when grading that as soon as you tried to hold the whites or lift the blacks, you lost either end of the picture (highlights whitening).

So for next year (2006), this led to

me thinking of using an external device for recording. By using the 750P's HD-SDI output you could achieve an uncompressed 4:2:2 image, much more like it, but what device could record such data?

Portability is a big issue for shooting on location if you have limited manpower, so studio decks were out of the question (F500, SRW5500). A portable recording device was a must. This left few options: Sony's HDW S280 recorder, Sony's SRW1 4:4:4 field unit or S.two disk systems. Expensive stuff, but once you look at external recording options you naturally look at your capture options too.

Disk was out for this show due to manpower and data handling. The S280 is still compressed recording, so the SRW1 was our only sensible solution. Once that was decided I began to look at the camera itself. The 750 has a 10bit chip compared with the better 12bit chip in the F900. This looked a good option, more affordable too, but again it seemed like a compromise and led me to research the Viper. What I liked about the Viper on the surface was its digital film approach. By recording image data RAW, straight from the CCD, it came across the same as film; once you have selected the log capture mode all you really need to worry about is focus, framing and exposure, like film. The green log cast can be seen as a digital negative: instead of an orange film base you have a digital green base.

Further Viper research showed that the camera had still to gain a strong foothold in the industry in the UK. The SRW1 can record externally up to full 4:4:4 colour space, but also at 4:2:2 levels, giving me the 750P or F900 options; but the Viper still looked a

strong bet. Going further in, the Viper stood up to all scrutiny. It shoots 4:4:4 and 4:2:2 in full colour or raw capture and it looks a very neat option. But what of the log capture mode that results in a green log look to the rushes? I needed to test the camera for its suitability.

Before testing, a shooting package had to be agreed. The SRW1 records on the superior SR tape format, which has such mild compression as to be virtually non-existent, and results using the Viper are, I was told, amazing. In its full 4:4:4 Filmstream mode it looks stunning, and so a camera package of Viper, SRW1 and Zeiss lenses (already owned) was agreed upon. Now on to testing this high-end package and viewing the results for myself

## Test shoot

In March 2006 I took the *Summer Wine* production to Yorkshire for two days' testing. With us came representatives from Grass Valley (Viper camera) and Cinetal (4:4:4 monitoring with the Cinemage monitor), as well as our camera team. This was my chance to test the Viper in 4:4:4 and 4:2:2 modes (for production decisions) and to give everyone involved a chance to see the Viper/SRW1 package in the flesh. Over the two days we shot some of the locations used in *Summer Wine*. Day one gave us some overcast weather with a few bright spots, a great chance to test the Viper's response to such conditions (it will not be sunny all the time when we film for real), but day two yielded snow – ideal for our Xmas show and to test the Viper's response to these varying weather conditions.

Many factors came into play for the test. Not just a chance for everyone to see the kit, but also to determine how

I would like to name check the people who have so far helped with all the testing: Nigel Arnott & Jeremy Evans at Thomson UK; Russell Branch at Cinetal/Innomedia UK; Alan JW Bell, *Last of the Summer Wine* producer/director; Steve Jamison at BBC Post Production.

difficult logistically it was to move all the kit around. How difficult would it be to monitor the dual-link pictures (do I need a monitor truck?), and how quickly, if needed, could I realistically set up and film if time was a factor.

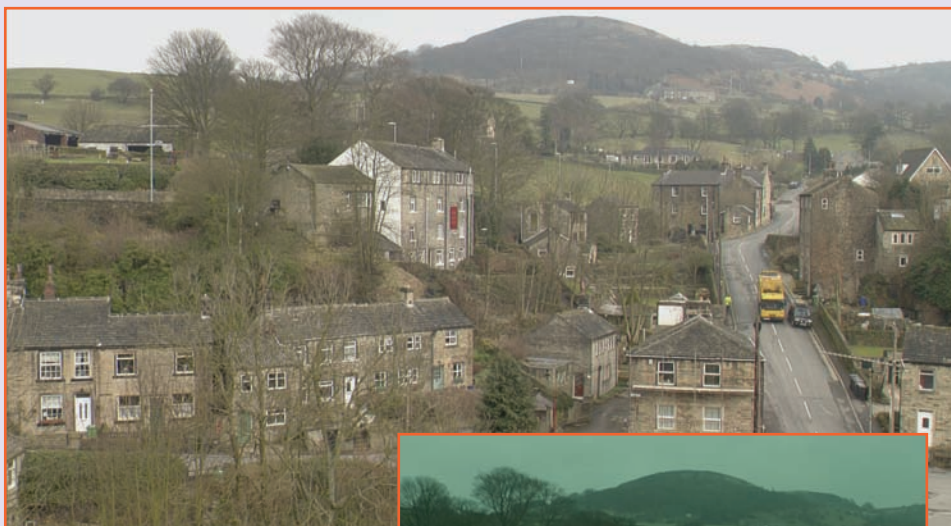
The answers were very good. Once you trust the format and its capturing capabilities it's very easy to shoot with just the camera and SRW1. In fact, due to the snow it made it very difficult to set up properly (timewise), so I shot without monitoring, with just the camera on a tripod and the SRW1 on my assistant's shoulder strap (under an umbrella). The results: perfect. This proved that while monitoring is an important part of filming, it is by no means critical and, if time is an issue, just go and shoot. It's just as trustworthy a format as film in that respect.

During the two days in Yorkshire a lot of questions were answered. The camera is not as bulky as some (no recorder bolted on), so looks very neat and compact, at the expense of needing an external recording device. This tethering to the camera is a downside, but a workable one. By using an external recorder you now have very little cabling attached to the camera itself (if you used an F900 with BNCs and audio coming out of the camera, phew); and everything routes through the recorder (monitoring, audio, etc). This means a less cluttered camera (only the single BNC for the viewing monitor and dual BNC for Filmstream or HDStream recording). Audio is not tethered to your camera, but to the recorder, which can be placed next to the audio truck.

A thought here. Grass Valley provides a breakout box (BOB). A heavy duty multi-core cable is attached to the rear of the camera and the BOB is placed where you need it, doing away with BNCs coming out of the camera. For this show it's an expense that's not required, but it is an option. Another option is Fibre Optic cable instead of the BNCs, which will give miles and miles of signal strength. Again not for this show.

### Grading

Once everything was filmed it was back to the BBC for grading. We ingested 4:4:4 and 4:2:2 footage into the Quantel iQ via Sony's marvellous



SRW5500 SR studio deck. Our main concerns were: is the footage good enough? How gradable is it? And how did 4:4:4 look compared with 4:2:2 and would that harm us? As most TV deliverable footage is 4:2:2, it was sensible to try out both flavours.

As it turned out, 4:2:2 HDStream mode (where the Viper records in 4:2:2 colour space straight from the CCD, bypassing any camera circuitry) gave us fantastic results, and the decision was made to shoot in 4:2:2. This also keeps data at more manageable levels and helps the production keep everything down to single link BNCs for capture and monitoring, making our lives easier.

It's important to weigh up a few facts about the Viper before filming. First, are you going to shoot 2.37:1 or 1.6:9? The Viper can film anamorphic without lens changes (and at full 1080 lines of resolution) due to its DPM chip architecture. Second, recording options: tape (SRW1) or disk (S.two)? No real perceptible difference between the two options. Workflow will dictate your choice. Third, the Viper's mode. Most people will want to shoot using the Viper's raw/log mode, so once that decision is made do you shoot 4:4:4 or 4:2:2? 4:4:4 full colour space is the best recording mode the camera has and is ideal for green/bluescreen and for any eventual filmouts, due to the 2K level of data being recorded. 4:2:2 offers a great alternative for TV. It still records in the Viper's raw/log mode, but keeps the data down to single link BNC (1.5Gb/s of data), making your post workflow a bit easier and on-set monitoring less



cumbersome and tricky. Finally, I thought I would list the kit as we are using it, as well as all our offline copies and on-set DVD copies:

- Viper digital cinematography camera recording in 4:2:2 HDStream;
- Zeiss DigiPrime lens set (six prime lenses plus sharpmax backfocus kit);
- Sony SRW1 4:4:4 field tape recorder including SRPC1 processing deck;
- Sony DSR D1000P hard disk DVCAM recorder;
- Sony DSR 45P DVCAM tape recorder;
- Liteon DVD Recorder.

The SRW1 will record 48 minutes of rushes to HDCAM SR stock. These tapes will be our master copies and will not be used for on-set viewing. We can go from the SRW1 to the DSR1000P via SDI for copies on set and instant replay of rushes. This method will preserve audio, timecode and pictures in the SDI signal. We can then go from the DSR1000P to the DSR45P via BNC for timecode, pictures and audio. This gives me DVCAM hard copies on tape for offline editing and, of course, a simple backup of the daily rushes on tape. We use the Liteon DVD recorder for simple daily DVD copies of each day's filming.

**Top: graded grab from the Viper test footage. Above: the raw signal.**



**Having started a camera career as a clapper loader and focus puller, as well as fashion and travel stills photography, Dan Mulligan is now a full-blown camera operator and occasional DP. He runs Rogue Element Films providing 4:4:4 digital camera services with Viper and Zeiss lenses. He lives in Worcestershire.**  
[www.rogueelementfilms.com](http://www.rogueelementfilms.com)