# DSLR HD video - no turning back

By Pieter de Vries ACS

It's been on the way for a few years and now it has arrived. Call it integration converging or merging, High Definition Digital Video has come to a DSLR camera near you.

There are many good reason to like the Canon 5D Mk11. One is that it answers the question as to why can't digital video cameras have a sensor of similar specs to those that are in DSLR's? Now with 5D Mk11 and the Nikon D90, they have.

Did Canon's engineers know what they were kicking off with the 5D Mk11? The video recording aspect of this model has all the traits of a feature that was included because it could be.

Because of their form factor, the current generation of DSLR cameras supporting HD video are not first and foremost designed to shoot a lot of handheld "footage". This hasn't stopped a lot of folks from going nuts over the 5D Mk11's HD video capability - recording 1920 x 1080 HD resolution at 30fps, an ISO range of 100 - 6400 via a full frame 21.1 mega-pixel sensor housed in the body of a 35mm stills camera. Did Canon's engineers know what they were kicking off with the 5D Mk11?

Even with today's frantic tempo of camera development that's quite an achievement, however I'd like to take a look at some of the more realistic aspects of this video integration that may have got mixed up in the excitement. There are a number of things that must be considered; some are technical, others creative, but each has some bearing on the other.

Home and pro video displays are larger than ever, with picture detail that has never been sharper. Digital cameras continue to capture even crisper and cleaner images and here you have in your hands a compact device with all the potential to capture near 35mm cinema quality footage at a very respectable frame rate.

The Canon 5D MkII uses a CMOS sensor approximately 36mm x 24mm in size, similar in size to the image area exposed onto double perforated 35mm motion picture film. So what does this mean if you plan to use a camera similar to the Canon 5D MkII for some serious or not so serious video work?

## Full frame sensors - staying focussed

The thing that may impact on you the most is the resulting shallow depth of field (DOF) of your images. Depth of Field is a measurement of depth of acceptable sharpness in the object space, or subject space

The DOF characteristics too are similar to those "recorded" on 35mm motion picture film by cameras such as those designed and manufactured by Arriflex, RED and Panavision.

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Razor thin DOF is one of the reasons why images look cinematic and movie-like and having those characteristics in a compact stills camera marks a turning point for cameras like the Canon 5D MkII. Digital stills cameras have included some basic option for video capture for a few years so why is this "full-frame" stuff so different?

Precise focussing has notched it's way up and become one of the essential technical skills you will need to master if you are to get the most from a camera of this quality. If you set focus just slightly off the mark, the image will appear out of focus on one of these big screens - these shots will not make the cut in HD.

This is what we are talking about.

*Shooting on a Mini-DV camcorder with a lens focal length of 11mm focussed at a distance of 2 meters with the aperture set at f.2.8, the depth of field is* ***1,210mm****.*

*The equivalent DoF at these equivalent settings on the Canon 5D MkII is only* ***100mm***

I have made a point about accurate focussing but on the other side of the coin, focus and its selective use will be used as an incredibly effective mood-generator in your video work.

Videographers who may have honed their skills via the Mini-DV path (using smaller 8mm size CCD sensors), will be at home shooting scenes where almost everything in wide shots is in focus - from the those irritating specks of dust sitting on the front lens element to the mountains in the far distance. Dealing with shallow depth of field may be an interesting learning curve.

Stills photographers on the other hand, have always had a "soft-spot" for the artistic benefits of the shallow DOF defined by the aperture, focal length and image format. They will also be well aware of the drawbacks.

This awareness, when carried over to shooting video on the current generation DSLR video cameras like the 5D MkII or the Nikon D90, will most likely come as second nature. For anyone for who is dipping their first toe in the digital video waters, there are traps.

## Progressive Scan panning speeds

You will have to be very mindful of the way that you move the camera while you are recording. These cameras use a progressive image recording format and this is key to that cinematic look that we love. This being the case, there are certain rules that most cinematographers have been aware of since the early days of the cinema, and the most important of these rules relates to panning speed.

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The camera records 30 fully formed, discreet video images per second and this ensures that there is going to be some small degree of image blurring whenever you pan or tilt the camera. Depending on the focal length set, the speed that you can effectively pan over a static scene will vary. The wider the lens, the faster the allowable pan and conversely, the longer the lens, the slower the pan.

Panning too quickly results in footage that is awkward to watch and to some extent it is going to be trial and error on your part to get it right. It is something that you should always be aware of whenever you pan over a scene.

With the more common interlaced recording format used by most Mini-DV cameras, this is not an issue, because the effective (interlaced) frame rate is 50 or 60 interlaced video fields per second, eliminating much of the blurring.

## Monitoring

Remember, you may be recording action that is constantly changing its distance from your camera. With the Canon, the Live View screen at the back of the camera is the only way to monitor the recording without attaching a larger external LCD display.

The Live View screen is fine for framing and to some extent setting exposure, but it is not an accurate or convenient way to deal with critical things like focus. Firstly, it's quite hard to pick correct focus on the wide shots, so I suggest that you use the feet/meter distance markings on the lens to manually set focus to the right distance.

There is nothing worse than covering action just a few metres from your shooting position only to discover that the lens focus distance was set to sixty metres. If it's fast action and it's a bright sunny day it can be hard to notice this discrepancy until it's too late.

## Handheld or Tripod

Most DSLR cameras are not designed for long periods of continuous handheld video shooting. As a stills camera, they feel perfect with all the controls in the right place. Even when you swap to a longer lens like a 70-200mm zoom, it can still feel comfortable in your hand.

A DSLR in video mode calls for a different way of holding the camera - you are not able to use the beautiful optical viewfinder. It will soon be obvious that you will not last very long holding the camera away from your body at eye level.

The size and weight of DSLR stills/video cameras makes them perfect for covering spontaneous situations, however the fact that they are so incredibly

compact and use the wider 16x9 aspect almost guarantees that there'll be annoying movement and see-sawing horizons.

The best advice to offer on handheld shooting is to always use a wide angle lens, always engage image stabilization, and engage closely with your subject.

The point of shooting in the handheld mode is so you can always react and flow with the action and this flow adds a dynamic that injects energy into sequences.

Always try to use a tripod and save your handheld shots for those scenes where it is really needed or when it will really add something special to your sequence.

## Zooming

Again, because of the design, it's not easy to operate the zoom ring while recording but this can be a big plus. Using the range of focal lengths on a zoom to find the strongest and most effective composition will limit the amount of irritating zooms and in many situations, will actually strengthen your story.

## Video & Stills

For some, there is a tendency to limit the duration of camera takes and record in bite-sized clips with no real starting or end points. You will need to get into a different frame of mind when you switch to video mode.

It is vital to shoot in a way that you gives you options later when you start your edit. By this I mean building in options that will allow you to speed up or pace down, to lengthen or shorten a sequence. Shooting without regard for these options only limits your final result.

## It's all in the detail

Detail, and lots of it is what we usually think of when we shoot HD. There is however, a lot to see in the wide screen frame and sequences can loose impact, cluttered up with far too much sharp but unnecessary information – in this case, more is **not** better.

If you shoot with an awareness of these things that I've mentioned then I believe that you can then work with and around them – most DSLR Video shooters are doing just that. The results from the 5D Mk11 and the Nikon D90 are just too good to be swept aside.

Other key aspects of shooting great video will never change regardless of the format, camera brand or recording format and I intend to write more about these in the future.

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Try to keep tabs on just what an incredible tool you have here. Some trade-offs have to be made but that's the way it is…….at least for the moment