



Digital Stills and Movie Camera

Using DSMC in documentary film



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Investing in the future by working together for a sustainable and competitive region



1. Executive summary

The scope of the project is in three parts. First testing out the technical aspects of the new DSMC introduced autumn 2008 by Nikon and Canon. The second part is a case study where a DSMC camera is used to produce a full documentary. The third part is to find out how DSMC cameras will influence the profession of photojournalists and videographers in multimedia companies. Findings from this first study suggest that the technical performance of the Canon 5D Mark2 is at the level of professional video-cameras, but there are some issues concerning user interface and lack of manual controls. However, new firmware updates and new DSMC models makes it applicable tool for journalist, photographers and videographers in the industry. The second and third case study will research how the practical workflow, pros and cons will decide whether this product will become a success or not and how it might change the industry.

2. Problem statement

The quality of the HD video from canon EOS 5 D Mark2 is very good, as described in the first report. The tests we have done, concludes with two major problems. One is the exposure controls or actually the lack of it. This is a major issue if one is to use the camera as a professional video camera. The second issue is the quality of the sound. Even with extra external microphones, there is too much noise on the soundtrack and it is almost impossible to override or knowing how to deal with the camera's internal compression and limiter system.

In this test, we wanted to focus on how to make a documentary using a DSMC instead of using a "normal" video camera. The problem with the sound is eliminated: in this test the sound is recorded separately on a hard disk drive, an Edirol R-09HR (the sound from Canon EOS 5 D is only used to synch up the external sound). The problem with the controls of exposure is in a way eliminated by using wide angle lens. The auto exposure in the camera will mostly make the shutter as open as possible. In this test, the lens used mostly is a fixed lens, 20 mm, f 2.8. The problem with full open exposure will be the lack of depth of field, for this type of documentary the problem is to find and hold the focus. By choosing the wide angle lens this lack of depth of field is less problematic, or at least minimized (in our third report, will focus on the new update of software for Canon EOS 5D Mark 2 which give the user possibility to override the auto exposure). For this test, the result would not be very different, because we wanted to use the camera in low light condition, to find out if the quality of the video would be usable as "professional" video. This documentary is from the "night" life in Stavanger, using no extra light. The only lights are from the windows and from the street lightning. A "normal" video camera could not make a usable video in this light condition. The fact that the light is so weak, the camera will always work with open aperture. Even if we wanted to use the depth of field as a storytelling grip, the lack of light would have forced us to use aperture 2.8.

The two main focus of this test is to test the cameras sensitive to light, and how the camera will be as a video camera in a direct film; a documentary without interviews or so-called direct cinema. In this kind of documentary, the photographer will “lose” control; no scenes can be taken as a shot number two.

3. Alternatives

The alternative in this test would be to use a traditional video camera. However, the light condition in this documentary is so weak that it would be impossible to make it without extra lightening; the light sensitive Canon EOS 5D Mark2 camera gave us flexibility in choosing scenes and how to tell a story of the nightlife in Stavanger. This documentary would have been quite different if we choose an ordinary video camera. The new camera was a tool to make another documentary caused by the light sensitive sensors compared to a video camera.

The picture below is form a test made by NRK, comparing the light sensitivity from Canon EOS 5D Mark 2 and a RED-camera. The price for the RED camera is 10 times the price for the Canon camera. As seen on this test, the light sensitivity from the Canon camera is impressive.

Canon EOS 5D Mark2

RED



Picture from <http://nrkbeta.no/red-vs-canon-5d-mark-ii-del-2/>,
<http://creativecommons.org/licenses/by/2.0/deed.no>

The fact that a DSLR-camera is quite common and not “scary” for the common people, gave us some scenes we would not have recorded as an ordinary TV-team. Of course this can have some drawbacks as well; the TV-photographer is not professionals, we do not take them seriously.

4. Analysis

*Link to the film, 520*304, Quicktime MP4 format:*

[Canon Eos 5D markII documentary](#)

The documentary film in this test is 15 minutes. The producer followed a 60 years old lady, spending a lot of time in the weekends in the centre of Stavanger, helping young and often drunk people. She is part of a movement of voluntary people; “Natteravn” (“Night-raven”). She is the oldest one of the “Natteravn”; mostly the Natteravn-members have youth themselves. How can she be so idealistic and spend so much of her leisure among the young and drunk people in the night?

The first we decided was to record the sound separately from the camera; this to eliminate the problem with the automatic recording of the sound-level in this camera. The workflow makes this more demanding, but in this analyse we will not focus on that issue.

No doubt the camera has a light sensitivity superior to a video camera. Even if we gain up a video camera, they have not a light sensitivity comparable to the EOS 5 D.

This documentary is an observational “direct cinema” documentary; a documentary made without using a tripod. Of course you can use tripod on some of the big shots, but most of the shots need a handheld and moving camera. The problem with the shape of the camera body, a camera made for stills picture and not for video, soon came visible. A “moving” camera with steady picture was very difficult, even if we used a 20 mm lens. After a lot of testing, the only solution to make a professional look as a moving camera was to make it as a part of a Steadicam. Steadicam is a construction often used in television and film to make a softness in the movement. When using Steadicam in this production, it was possible to walk and even run, without having shaking pictures. The lower side by using Steadicam is that it needs a lot of work to balance out the camera, the picture from the camera is sent to an external LCD-monitor, it needs an extra battery. To use a Steadicam is labour-intensive and it is expensive (the Steadicam we used costed £4000). You need a rack to put the Steadicam when it is not used; this means you often need an assistant if you want to be efficient. The upper side of using Steadicam is the smooth movement, it give the documentary an extra look of professionalism. The storytelling by using a smooth moving camera will differ from camera on a tripod.

For this kind of documentary, the shape of the camera body was quite challenging; it is impossible to make a smooth movement as a handheld camera like we do with a traditional video camera. The viewfinder is fixed, you need to balance the camera in a position impossible to make a steady shot for a long time. If you can use a tripod, the shape of the camera is less problematic.

5. Conclusion

The light sensitive camera clearly gave us new opportunities in making documentary in low light conditions. It would have been impossible to make this documentary with a traditional video camera without using external light. When using external light in a documentary like this, the light will be an alien substance and clearly influence the participants in the documentary.

No doubt this is a tool for making documentaries, but the shape of the camera was quite demanding without using tripod. To use a DSLR camera handheld with movement is impossible if you want a professional look on the film, even with wide angle lenses.

Using Steadicam gave us the flexibility we wanted; a moving camera without shaking pictures. The drawback by using Steadicam is the price and it is labour-intensive. It is also hard to work with Steadicam for a long period; you have to exercise to make a good result. The upper side of using Steadicam is the professional look you achieve by the smooth movements.