When AUTO is not enough

by Ian Simpson (Wollongong Camera Club Movie Makers)

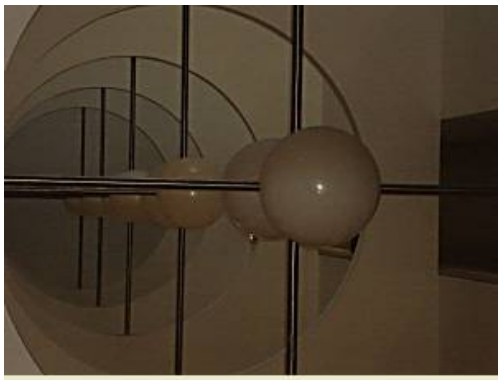
Any photographic magazine 30 to 40 years ago would have been filled with advice on how to get the correct exposure reading; what was the best lightmeter to use and which was the best way to measure the light intensity? Now, however, through the imaginative use of electronics, concerns about getting the correct exposure reading have almost disappeared. Conversations at club meetings are no longer concerned with getting evenness of colour and image density from scene to scene.

Our little camcorders automatically do this for us *and only occasionally get it wrong*.

So how do we pick those times when the camcorder's electronic exposure reading is wrong?

To help answer this question we need to understand under what conditions our camcorder will give us an acceptable exposure. So what do we need to look out for? What are the chief characteristics of light? For simplicity we'll stick with daylight and look at its four attributes:

1. Quantity,
2. Direction
3. Colour (Temperature)
4. Harshness



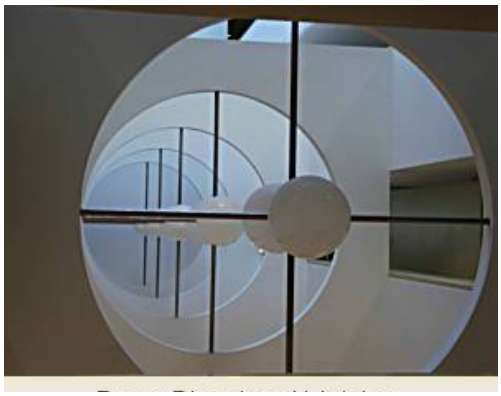
Poor Lighting - noisy, grainy images

Quantity of light determines the aperture setting and possibly the electronic gain setting in the camcorder.

The latter comes into play when the light intensity has dropped such that the lens is now set at its maximum aperture. Any further "brightness' of the captured image is achieved at the expense of increasing the electronic noise in the image. This shows up as a "grainy" image and loss of colour.

Thus strong lighting is needed to bring out the colour of the scene but unfortunately this may also bring increased contrast, while also improving the depth of field (focus) of the image.

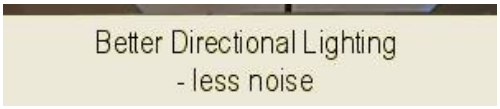
Direction of the light determines, through the introduction of shadows, the appearance of the third dimension to the otherwise two dimensional image.



Frontal lighting gives a flat looking 2D image of an object. More moulding to the object of interest is achieved with the light coming from one side. The shadow so created from this side lighting can be lightened by using a reflector.

An interesting anecdote concerns the discovery of the use of reflectors. D W Griffith's cameraman, Billy Bitzer, for a joke exposed a few feet of film of two actresses at a table during a lunch break. The sun was right behind them and so he expected to get them as silhouettes, but instead he got as

well as the expected halo around their heads, a soft modelling of their faces. The reason for the lack of a silhouette was the white tablecloth acted as a reflector.


Better Directional Lighting
- less noise

Colour Temperature is the blueness or redness of the sunlight.

"White light" is rarely white. It is bluish by the midday sun, especially if the sky is cloudless, and yellow to red at sunrise and sunset. The light can also take on colour casts when the light is diffused by foliage or is reflected from a coloured object.

As our camcorders have built-in automatic White Balance correction, if we want to get that red glowing sunset we must set the White Balance to the daylight setting. Also if your camcorder is slow to set the White Balance, it is often better to manually set it to daylight when videoing out doors.


Cloudy-Bright Lighting

Harshness of light refers to the hard, clearly delineated features achieved in strong sunlight compared to soft lighting achieved by diffused sunlight.

The condition often called "cloudy bright", where the sun is thinly veiled by cloud, is the light that allows us to shoot a subject from any angle and where we are happy to leave the automatic exposure circuits to do their job.

Now let's see why we are at times happy to leave the automatic exposure alone. For the automatic exposure to be correct the scene must conform to the following three requirements:

1. The scene must contain equal amounts of light and dark areas.
2. The predominant light source must evenly light the subject.
3. The contrast range of the subject must be less than 5 stops. That is, the difference between being lit by bright sunlight and being in the shadows on a hazy sunlit day.

If any of these conditions are not met the exposure chosen by the automatic circuits will be in error. To correct this error we, the operator of the camcorder, must make an intervention. To assist us in making a reasoned correction, I'll mention three possible actions.

1. We can reframe the scene or subject so that it now meets the above criteria.
2. We can adjust the zoom lens to the maximum telephoto position and take a spot reading, then lock in that setting, and if necessary make a small adjustment. For example, a spot reading of a Caucasian face will need an extra half a stop adjustment.
3. The theoretically best solution is to place an 18% Grey Card in the same lighting as the subject and lock in that reading. Why? Because this is how lightmeters and exposure circuits are calibrated to give the "correct" exposure reading. All three of the above conditions will average out to an 18% grey light level.

So the secret of good exposure is for us to recognise those scenes which are not 18% scenes and then make the manual intervention needed.


Strong Lighting
Extreme Contrast Range
No Correct Exposure

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