

## **CAMERA SET UP AND OPERATION**

When setting up the camera (or cameras), first get the staging area as close as possible to the final lighting that you will use, but avoiding coloured gels if you're using them as they will affect white balance when you're setting up.

Put a white piece of paper on a music stand in the middle of your staging area. It can be lined paper, but should be primarily white. You will use this to set the white balance on the camera.

Set up process will determine correct lighting, correct focus and correct white balance.

Place your camera in the location you'll be using for filming. Use one camera for audition recordings, two cameras for concerts.

Open out the LCD display on the left side of the camera. Insert a memory card in the A slot. With a 32Gb memory card, and the highest quality settings, you'll get almost 3 hours of video. If this might not be enough, you need to insert two cards (one in A and one in B slots), and then choose Relay recording in the menu. To do this, press the MENU button and then the middle icon (looks like film) and scroll down to Rec Media for Movies. Click the rectangle to the right of this text to edit. Click A as the main memory card, then press Relay Recording and choose A > B. Both cards will need to have been formatted prior to this. Information on this is in the next section.

The cards get inserted with the label towards the front of the camera. When you have put the cards in, pull across the cover (from back to front), to close the card area. You can't shoot video with this door open. When inserting and removing memory cards, always make sure the camera is turned off. This prevents data corruption!

Plug in the power cord if needed (it is advisable to always use the power cord!).

Hit the power button, and take off the lens cover. Put it somewhere safe, like in the camera case, so that they never get lost or left somewhere. This is important to retain optical quality from the lens.

All navigating is done by pressing the LCD screen. Please keep your hands clean for this!

### **FORMATTING THE MEMORY CARDS**

Before you start, format the memory cards. To do this, press the FUNC button in the top left corner of the LCD screen, then press the MENU button, also in the top left of the screen. Now press the wrench icon and scroll down until you get to Initialize. You scroll by sliding your thumb or finger upwards on the screen. When Initialize is highlighted, press the rectangle to the right. This should take you to a screen giving you three choices of what to initialize. Press Mem. Card A, then press the initialize button when it becomes available. Confirm that you wish to format the card. When the process is finished, press OK. And go through the same procedure for Mem. Card B. Since video doesn't get written to the internal memory, we don't need to worry about this. Once finished, click the x in top right to exit this menu.

### **SETTING WHITE BALANCE**

Point the camera at the piece of white paper and zoom in as far as possible. There are two zoom rocker switches on the camera. They can be identified by having W on one end and T on the other. W=Wide Angle, T=Telephoto (zoomed). The rocker switch on the top of the camera typically does slow zooming, and the switch located towards the back of the camera typically does variable speed zooming. Practice with these switches so that you know how they handle. It is possible to get great control from them if you know what you're doing! That said,

for audition recordings, you'll set the camera frame and leave it. No zooming or other fancy camera work while recording these. It's not what the people watching them are looking for.

Press the FUNC. Button on the LCD display and press the White Balance button. Press the Set 1 button and with the camera pointed at the white piece of paper, press the Set WB button at the bottom of the screen. An icon will appear and flash in the centre of the screen. The process is done when the icon disappears. Press the x button in the top right of the screen when you're done.

## **SETTING THE EXPOSURE**

Next you need to get the lighting right. Since these cameras are very sensitive and re-set their own exposure settings regularly, we use manual settings so that they don't change. Otherwise, you'll have real problems in the editing process to try and maintain a consistent lighting level that doesn't change. There are four settings for the exposure, and we go through them in sequence to optimize the exposure. It is the combination of these settings that will give you the best results.

Zoom out so that you can see more of the stage. If you're using a fixed camera, zoom to the level that you're likely to be at for filming. If you're going to zoom in and out during filming, zoom out for the purpose of setting the exposure.

BLC (Back Light Compensation). Typically this needs to be always on. This helps to maintain good lighting for the overall scene. To turn this on, press FUNC. and then press the BLC always on button. Turn it on, and then press the x top right to exit.

The other settings are all within exposure. We will use manual settings for exposure to help give us the most consistent results during filming. Hit FUNC. and make sure that Rec. Programs is set to M. If it isn't, press the Rec. Programs button and choose Manual Exposure. When you do this, you'll find three settings appear on the screen...

An F number – this is the size of the aperture and determines how much light actually reaches the camera's sensor. A lower number means the aperture is open wider and lets in more light. For concert lighting, we are likely to need as much light as possible, so set this to a low value – around F2.0 for starters.

A fraction (eg 1/30). This is the shutter speed. Up until recently, all film was output using a frame rate of between 24 frames per second and 30 frames per second. These days with bluray its more common to see a frame rate of 60 frames per second or more. I would suggest you start with a frame rate of 1/60<sup>th</sup>, and if it looks too dark, change this to 1/30<sup>th</sup>. You never want to be slower than 1/30<sup>th</sup> since this will likely be the final output frame rate. Anything lower will look very jittery. If there is too much light, you can safely go above 1/60<sup>th</sup> second, but for the purpose of filming, there's no benefit to this, so only use a higher rate if the image is too bright.

A number with dB after it (eg 0dB). This is the level of amplification of the video signal. Amplifying always introduces noise, so the lower the figure, the better. Only use this as a last resort, and set to a maximum of 3dB to keep image noise to a minimum. The preferred value is 0dB.

Zebra stripes on the screen will help determine where levels are too highly exposed. Make sure none of your main focal points have zebra stripes as over-exposure to this level is impossible to fix – kind of like clipping audio.

Once you're happy with the exposure settings, press the x in the top right of the screen.

## FOCUS

Press the MENU again and press the focus button. Make sure manual focus is turned on (an orange vertical line to the left of MF on your screen. Press MF if the orange vertical line is not there. Now use the focus ring on the front of the camera to focus your subject. The area being focused will be zoomed in so that you can do this accurately, and a red outline appears around anything that is well focused. Focus range depends on how far you are from your subject. The closer you are, the more sensitive the focus. For concerts, you're typically at the back of the hall, and will be able to keep the same focus throughout the concert without ever needing to worry about whether focus has been retained. When you're close to your subject, if they move significantly, the focal point changes, and your subject could easily become out of focus. To minimize the chance of this, locate your camera at a reasonable distance (20ft minimum) from your subject. At this point, changes in focal point within a small amount, become insignificant. If you are uncomfortable with setting focus manually, you can put it onto auto (press the MF button until the orange vertical line disappears). In low light, the camera will search for best focus and this can really mess up your video, so manual focus is the best option. With higher levels of light, focus accuracy is likely to be better.

In auto focus mode, you can select the area being focused by pressing it on the screen. It must be within the rectangle on screen. You can also use auto focus to create your focus, then switch to manual so that it doesn't change.

Press the x if you don't need to be in the focus setting section any more. You may need to return to this section, although if manually focusing, rotating the focus ring will give you control over focus.

## AUDIO

You only need reference audio from the camera to help you line up your video when editing. Your final audio will come from recording as you would any other audio recording – using Cubase/Nuendo. The recording level in the camera can therefore be left at auto levels. To check this setting, click the FUNC. button and scroll down until you see Mic. Level. Click and set to Auto. Click the x to exit.

Now you're ready to record. There are two record buttons on the camera. One on the back to the right of the viewfinder (its red), and one on the top (with the text START/STOP). There will be a visual indication on screen that the camera is recording.

**When your session is finished, remove the memory cards and store them safely and securely. Its important to transfer their contents to the computer as soon as possible.**

**TIP** – One of the hardest parts of editing is lining up the video with the audio that your record in Cubase. This is a manual process. So, it's best to keep the video camera and audio recording for your entire session. You can then do all your editing in Premiere (the video editing software). If there is going to be a long break, then you should stop your video and audio, but remember that this will mean one more set that you need to line up!

## **VIDEO EDITING**

The editing process uses three applications – Premiere, Media Encoder and Encore. It will consist of bringing in all your assets (typically video and audio), lining them up, editing them, encoding them, then authoring a DVD. This is a much more involved process than creating an audio CD and even though it takes significantly less time than it used to, it still takes a long time!