

Driving The Camera



Three out of Four Rules

- Four basic rules for taking better photos
- Three of them say -
- **'Hold the Camera still:-**
 1. '- as you are about to take the shot'
 2. '- as you press the shutter and take the shot'
 3. '- immediately after you take the shot'



The Fourth Rule

Do not forget the other 3 rules



Four Rules !!

- Most soft images are due to 'camera shake'
 - Moving the camera as you press the shutter
- The camera trembles in your hand
- Lean your arms on a post, or pillar or wall
- Keep your feet apart
- Almost ALL mistakes in exposure, contrast, colour, etc. can be rectified with software
 - A fuzzy image due to camera shake is lost





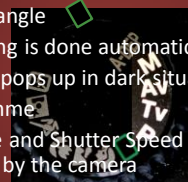
Holding a Camera Still

- Hold the camera firmly in your right hand
 - Finger on the shutter button
- Hold the lens firmly in your left hand
 - Supporting the underside of the lens
 - As far forward as possible if a long lens
- Tuck your arms into your chest





Driving the Camera

- The camera has a set of fundamental buttons
- Green Rectangle 
 - Everything is done automatically
 - Flash pops up in dark situations
- P – Programme 
 - Aperture and Shutter Speed selected by the camera
- These options work a DSLR camera like a Compact



Driving the Camera

- Options to Drive the Camera
- M – Manual
 - You set Aperture, Shutter and ISO
- Av – Aperture (Aperture value) Priority
 - You set Aperture and ISO
 - Camera sets the shutter speed
- Tv – Shutter (Time value) Priority
 - You set the Shutter Speed and ISO
 - Camera sets the aperture



Shutter Speed Priority - Tv

- If taking a succession of fast moving images
 - Use Shutter priority - Tv – (Timed value)




1/1000th sec




Aperture Priority

- 90% of serious photographers use the Av (Aperture value) setting
 - Called 'Aperture Priority'
- You set the Aperture and ISO
 - The camera works out the shutter speed
- Many consider the overriding criteria in 'driving' a camera is to determine what is and is not in focus




Using Aperture Priority

- Aperture
 - Large aperture – lots of light - small amounts in focus
 - Small aperture – less light - more in focus
- In most circumstances the most important choice-
 - How much of the image is in sharp focus
 - Shutter speed and ISO follow from the aperture choice




Driving the Camera

- The correct amount of light to the sensor gives a **correct exposure**
- The **correct exposure** is a balanced combination of Aperture, Shutter Speed and Sensitivity (ISO)
- Exposure is like a wall
 - Has to be an exact height




Driving the Camera

- Our wall is say 3 metres high
- Built in different parts:
 - Blocks at the bottom
 - Stone in the middle
 - Bricks at the top



3 metres



Driving the Camera

- Our 3 metres wall
- Equates to correct exposure:
 - Blocks are Sensitivity
 - Stone is Shutter Speed
 - Bricks are Aperture

Driving the Camera

- If we increase the aperture
 - Giving us more light
- The wall is too tall
 - Image is over-exposed

Driving the Camera

- If we increase the shutter speed
 - Which decreases the light - less light
- The wall is not tall enough
 - Image is under-exposed

Driving the Camera

- We have to trade off three components to create an image
 - Aperture
 - Large aperture – lots of light - small amounts in focus
 - Small aperture – less light - more in focus
 - Shutter speed
 - Slow speeds – lots of light - create camera and subject movement
 - Fast speeds – less light - freeze moving objects
 - Sensitivity
 - Low sensitivity - best colour rendition and less digital noise
 - High sensitivity - degraded colour and more digital noise

Driving the Camera

- So the three components to achieve a correct exposure are:

Aperture	Shutter Speed	ISO Sensitivity
f2.8	Each Step is ONE STOP	12,800
f4.0		6,400
f5.6	60	3,200
f8.0	125	1,600
f11.0	250	800
f16.0	500	400
f22.0	1,000	200
f32.0	2,000	100

Driving the Camera

- We saw earlier three components to achieve a correct exposure

Aperture	Shutter Speed	ISO Sensitivity
f2.8	1/ 15	12,800
f4.0	30	6,400
f5.6	60	3,200
f8.0	125	1,600
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Driving the Camera

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f32.0	2,000	100


Each Step is ONE STOP

↑ More Light
↓ Less Light





Driving the Camera

- In the viewfinder are some basic settings:
 - Aperture
 - Shutter Speed
 - ISO Setting
 - Ignore the other settings for the moment
- If you set either Aperture (Av) or Shutter Speed (Tv)
- Check what the camera is giving you on the other settings and make adjustments

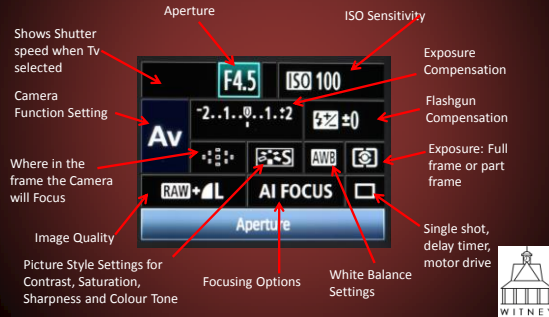


Other Options

- Most modern DSLRs have a LED display
 - See your image after taking it
 - Compacts or DSLR Live Mode - see your image before you take it
- Also can be switched to show all the main functions you can change





Camera Functions




Further Functions


- Every Camera has a 'Menu' system
- A further 100 – 150 functions / options
- All displayed on the Display Screen
 - Able to see all the functions in the dark
- Now all you need to do is to
- 'Drive It'
- Don't let its auto systems Drive You



Driving The Camera



Exposure Problems




What is a Correct Exposure

As taken with the Camera



What is the Problem

- The sky and the land in all landscapes have a differing exposure level of 2 – 4 stops
- The Camera averages the sky and land exposures
 - Making the sky too bright
 - Making the land too dark
- If you make the Camera expose for the land
 - The sky will be blown out – overexposed



What is a Correct Exposure

As taken with the Camera



What is a Correct Exposure

Very Overexposed Sky Area Heavily Reduced in Exposure and Blues Enhanced

Exposures and Contrast Adjusted

Exposure Reduced so House is Correct Exposure



What is a Correct Exposure



What is a Correct Exposure



Wide Exposure Variation

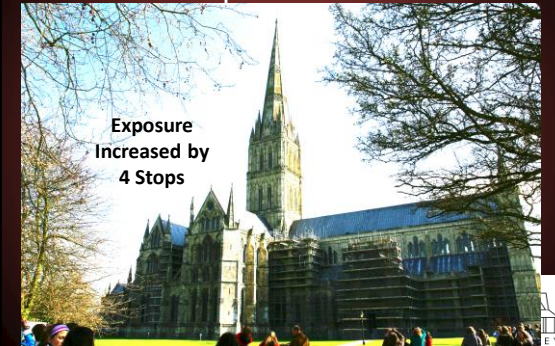
As taken with the Camera

Bright Sky with One Side of Salisbury Cathedral in Shadow



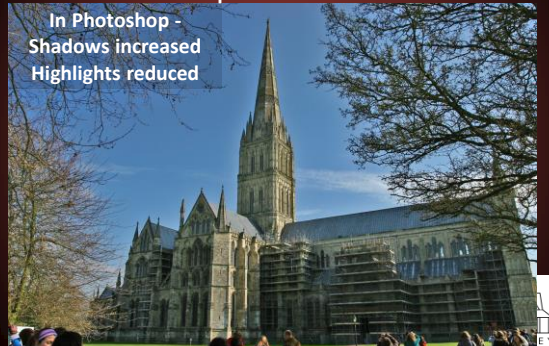
Wide Exposure Variation

Exposure Increased by 4 Stops



Wide Exposure Variation

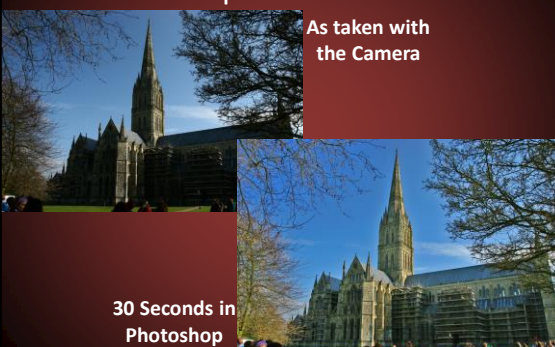
In Photoshop - Shadows increased Highlights reduced



Wide Exposure Variation

As taken with the Camera

30 Seconds in Photoshop




What is a Correct Exposure


As taken with the Camera




What is a Correct Exposure



Exposure Reduced so Sky is Rendered and Colours Become Correct



What is a Correct Exposure




How to Deal With Exposure

- Simply - you cannot
 - in a single shot - with the camera
- Easiest way - use Lightroom or Photoshop
- OR Take multiple shots of the same image
 - Each exposure 1½ - 2½ stops different
- Use HDR packages such as Photomatix
- These take the correctly exposed parts from the different images
 - Combines them into a correct exposed image



Exposure Problems



Making Images



Making Images

- We use the term 'Making Images'
 - Rather than taking photos
- We wish to be creative
- Make something we can be satisfied with
- Probably we will photograph at a location
 - Scenic view, sports event, seaside, gardens
 - NT Property, castle, holiday event
 - Family, children, wedding, birthday/anniversary



Plan and Prepare

- What images do you want?
 - Do you know when and where you can use a camera?
 - There may be restrictions
 - A bar on cameras or flash or tripods
- Are you taking images to give to other people?
 - What images will your people require
- Take hundreds of images – all with care
 - Give yourself many to choose from



Plan and Prepare

- Taking Landscapes or Seascapes
- Arrange to be there early morning or late evening
 - The light at midday is often harsh and 'contrasty'
 - Early morning or evening light is softer
- Take a tripod
 - Always makes landscapes better



Plan and Prepare

- Professional Photographers prepare a list of images they wish to take at a location
- Then decide how to obtain those shots
 - Tick these off as the 'shoot' becomes completed
- What camera(s) and lenses do you need?
- Do you need any waterproofs if it rains?
- For you and the kit



Composition

- There are NO hard and fast rules
- If the image is creative - break all the rules
- Our eyes are more pleased to see:
 - Lines going from bottom left to top right
 - Main point(s) of interest on a 'third'
 - Not in the centre



Composition Suggestions

- Cut out information that is not contributing
 - This means moving in (or zooming) closer
- Create a focal point for your image
- Give animals/birds space around them
 - Allow them space to 'move out' of an image
- Frame an image with vertical and horizontal components at the edges
- Create lines that move into the image
 - Recession



Composition Suggestions

- Get the background right
 - Remove unwanted details
- A blurred and/or dark background is best
 - Avoid trees growing out of peoples heads
 - Clear away plastic bags etc. from the scene
 - A muddled background is distracting
- Make sure people are looking at the camera
 - Particularly children and talkative adults
 - Ask people to remove their sunglasses
 - So you can see their eyes



Getting the Basics Right

Sinclair Scott, President
Witney Photo Group

Space for Swan to 'move out' of Image



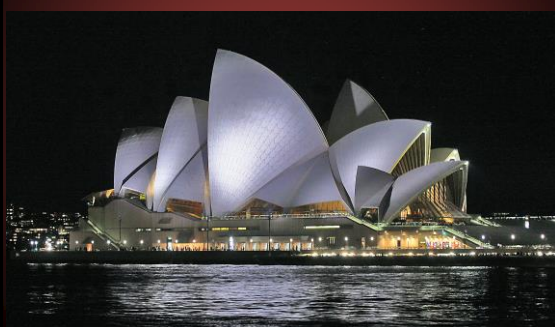
Space for Koala to 'move out' of Image



Space for Leopard and no background



Simple Background

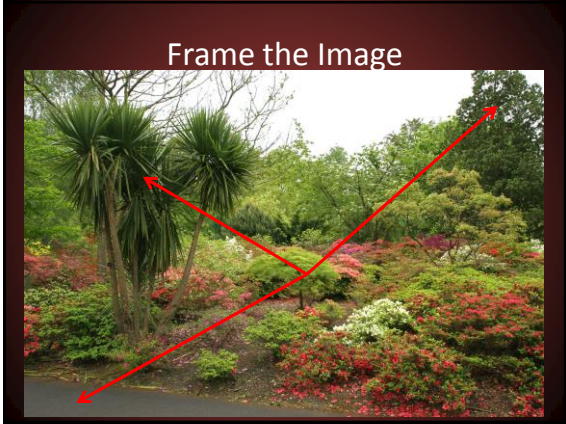
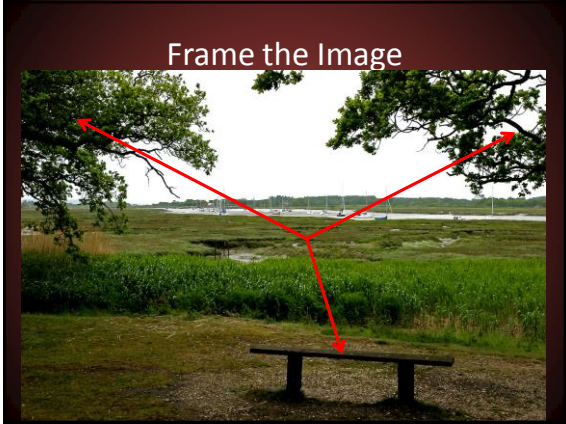


Too Much Information in the Image



Cut out Unwanted Information





Post Processing



Why Post Process?

- The main advantage of digital images
 - May be amended after taking
- You cannot (yet) recover out of focus images
 - Or those that are blurred with handshake
- Almost everything else you can recover or amend with software
 - Exposure, saturation, sharpness, shadow and highlights, crop (using part of an image), white light, tilting images, etc. etc.



Software with Cameras

- Cameras come with a bundle of Software
 - Updates on-line are regularly available
 - Mostly free of charge
- RAW Conversion
- Stitching images to form a wide/long panorama
- Operating a camera from a computer keyboard
- Image storing facility



RAW Conversion

- Manufacturer's free software
- Adobe Lightroom – about £110
 - Very sophisticated and intuitive software
 - Very sparing on disc storage
 - Can also manipulate jpeg files
 - A first choice by almost everyone (PC and Mac)
- Aperture (for Macs only) – about £100
- Adobe Photoshop CS6 – about £700
- Adobe Photoshop Elements – £70



Photo Manipulation

- Lightroom will allow changes of settings
 - Exposure, contrast, sharpening, cropping, etc
 - Will not allow heavy manipulation
 - Layers, deletion of unwanted parts of an image
- Adobe Photoshop Elements – about £70
 - Allows all the manipulation you can dream of
- Its big brother Photoshop CS is used by professionals - £700




Photo Manipulation

- Many free downloads:
 - Best of the bunch - Picasa, Pixlr,
 - Gimp, MS Picture Manager, Paint, etc
- Others you have to pay for:
 - Aperture - £45 (for Macs only)
 - Corel - £65
 - PhotoPlus Essentials - £30
 - PhotoPlus X5 - £65



Advanced Manipulation

- High Dynamic Range (HDR) Software
 - Creates a dynamic look to images
 - Marmite images – Some people love it
 - Many hate it
 - Photomatix – about £75
 - Available in later versions of Adobe Elements
- Nic Software
 - A range of simple to use manipulations creating dynamic results – again a bit Marmite for some



Simple Post Processing



- They did not look at what they were photographing
 - Branch coming out of a child's head
 - Child is facing away
 - Hand amputated
 - Slither of another child in the photo
 - Harsh shadows black out the smiley faces



Simple Post Processing




- In 2 minutes on a computer:-
- Branch Gone
- Part of a child gone
- Shadows enhanced so we can see faces
- The amputated hand needs A&E – not software



Post Processing




Flash



Flash

- Mainly used when the light is low
 - Also fill-in flash softens shadows in daylight
- Most DSLRs have a small built-in flash unit
- All DSLRs have a shoe on which to mount a more powerful flash gun
- All DSLRs can drive a set of studio lights
 - Professional photographs of people, families, objects
 - Witney Photo Group possess such a set of lights
 - For members to borrow



Getting the Basics Right

On the Camera Flash

- Small pop-up flash guns
- Very small light output
- Cannot direct the flash
- Often make the DSLR act as a compact
 - Delay in firing after pressing the shutter
- Limited use to create high quality images
- Some lens hoods get in the way of flash light
- Cause red eye, same as a compact



Independent Flash Guns

- All manufacturers make powerful flash guns
- Either sit on the camera hot shoe
- Or can be cabled off the camera
- Head twists
 - 360° horizontally and 90° vertically
- Many can be wireless driven
 - Multiple flashguns
 - Automatic exposure guaranteed



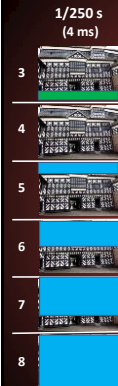
Flash Sync Speed

- The shortest shutter speed in which your camera shutter will allow a flash gun to fire when ALL the sensor is open to the light
 - Normally 1/250th or 1/125th second
 - DSLR automatically sets sync speed when you switch on flash
- You can override the sync speed
 - So long as the shutter speed is longer
 - Creating a natural image supported by flash



Flash Sync Speed

- Flash duration is 1/1000th second
- At 1/250th second shutter setting the whole image is seen for 1/1000th second
- In this period the flash gun is triggered
 - While all the frame is seen
- Sensor will be covered at faster speed



Using a Flash Gun

- Flash gives a harsh light
 - A small area from which the light is produced
 - Increasing its area reduces the harshness
- Use the built in deflector
- Bounce the flash off a ceiling or wall
 - Must be white area or you introduce a colour shift
 - Must be a fairly low ceiling



Spreading the flash light



Spread the flash light

- Manufacturers have all sorts of devices
 - Enlarging the flash area
- However you spread the light
 - Camera automatically compensates the exposure
 - Called **T**hrough **T**he **L**ens (TTL) metering
 - Some use ETTL - Evaluative Through the Lens Metering



Fill-In Flash

- Puts light into shadows
- All manufacturers cameras and flashguns have a method of reducing the flash output
- In sunlight
 - Use flash
 - at minus 1 to 1½ stops
- In daylight with no sun
 - Use flash
 - at minus 1½ to 2 stops



Fill-in Flash



Studio Lights

- Hire a studio and photograph your
 - Family, dog, cat, model, etc.
- Studio flash works in M - manual mode
 - Set the camera to 5500k (Flash setting) white balance
 - Set the shutter speed to 1/125th or 1/250th
 - Depending on your camera
- Use a flash meter to measure the light



Studio Lights

- The flash meter will give you an aperture reading
 - Set your camera to this aperture reading
 - Take all the shots you want at these settings
 - They never change - unless you move the lights
- In a studio we measure incident light
 - The amount of light arriving at the object
 - Not reflective light bouncing back from the object
 - Measured by the camera



Flash



Getting the Basics Right
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GETTING THE BASICS RIGHT
AN INTRODUCTION TO BASIC DIGITAL PHOTOGRAPHY
Sinclair Scott
President, Witney Photo Group
30 September 2014

