OLYMPUS OM-1 GUIDE

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PHIL NORTON PHOTOGRAPHY

Menu Settings, Custom Modes, Buttons & How To Use All The In- Camera Features

Also Includes Composition, Planning, Exposure Triangle and More

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ABOUT THIS GUIDE

This guide is intended for anyone interested in Olympus cameras and specifically the OM-1. The 'vision' was to give you a guide the the camera, its features, menus and functions, and also guide you on your journey into photography. Please view it as a guide and reference with plenty of tips and in some areas plenty of detail too. It should help to give you a quick way to refresh your memory and encourage you to get out and shoot. Began at first as a quick guide to settings for Buttons & Custom Modes it has grown and grown into what is almost a complete guide to understanding your OM-1 and the practice of Landscape Photography and other genres.

Divided into sections, it covers the menu and how to set up your Olympus OM-1. I include how I set my camera up, tips and tricks, and suggestions for how you can 'design' your own settings. Once you understand my settings and my thought process you should be able to apply the same approach to your own settings.

Photography 101 covers the technical theory of camera settings, the Exposure Triangle, Depth of Field and Hyperfocal Distances before moving on to the aesthetics of landscape photography and Composition. I also give plenty of tips on Planning Locations and an overview of some of the best applications available to use.

Techniques explores how to use the features of your Olympus camera for creative photography, including Live Time, Live ND, Exposure and Focus Bracketing, High Res and Live Composite, and AI Tracking Modes. This covers all the main features and from these you will understand a great deal about your camera.

Processing Workflow shows you how to develop your own workflow. When processing your images it is crucial to organise the 'work' step by step so that you have a 'flow'. I show you my own, suggest how you can explore your own and suggest applications to use.

Lastly, I will suggest ***Gear*** to use, what is essential, what to look for and what to avoid. I include many of the items I use myself and not one single item issomething I do not have or do not find useful.

Although this project started out life as something that was going to be a Mobile Web App it has grown and is more suited to a bigger screen. You will have received the link for the online version which is Mobile Friendly and this PDF version, useful when you do not have a data connection.

Finally, this has taken three months for me to research and write, during that time I've missed so many shots because I've been stuck in front of a computer even today on the hottest day of the year (June 2022). I do hope you find it useful, please don't share it with others, it would be nice to get a little something back for the many hours put into it.

TIP Save the Online version to your mobile phone for really quick access. When viewing in your mobile phone browser on IOS and Android select the 'Share' menu and tap 'Add to Home Screen'. It will then be saved with a square icon just like an App.

For the PDF version please save to your favourite App for reading this format.

OVERVIEW OF THE MENU SYSTEM

Your camera is nothing more than a tool to help you with your creative vision, and it should not be a barrier. In this guide I give you some simple tips, settings, and how I use Custom Settings to get the most out it.

Olympus cameras are known for their complexity simply by virtue of the features packed into them. With so many items in the menus, buttons and customisation possibilities it can get very confusing. In this guide focus is given to the OM-1. Some areas we will go into in detail whilst others are brief, I want this to be a reference with tips I know you will find useful, not a manual.

GET TO KNOW YOUR CAMERA

It's pretty obvious how important this is. Your camera needs to be a tool that you can reach for and instinctively know what to do so that your concentration is on the scene in front of you. Understanding the menus and functions is important.The good news is you do not need to know everything. There are many functions you will probably never use, and some settings that need little if any attention.

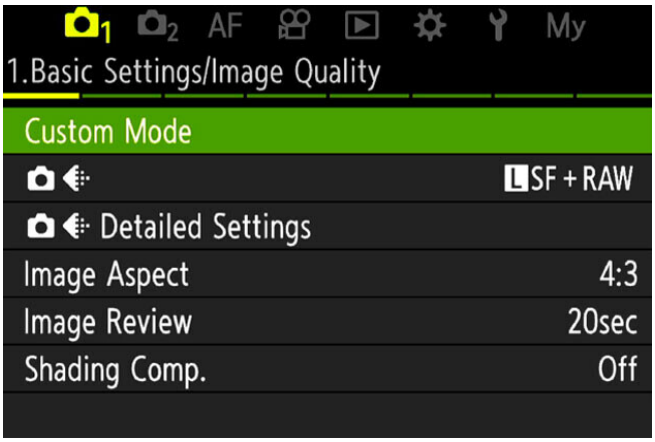
→ **TIP** Manuals are so hard to digest. Instead of trying to read it, go through the menu one setting at a time. Go deep into each setting without changing anything you're not sure off. Look up settings you don't understand, your memory retention will be higher.

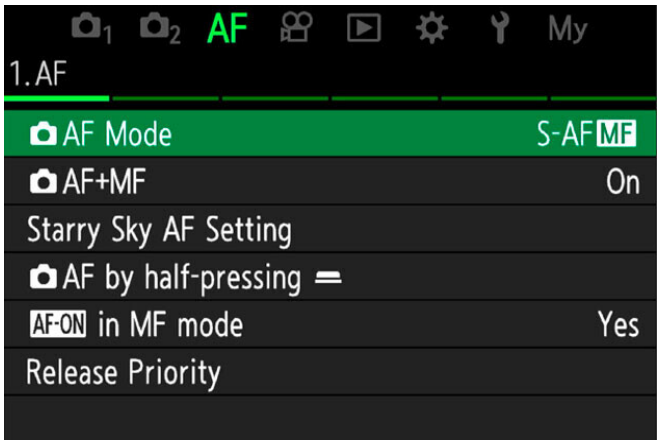
FIRMWARE UPDATES

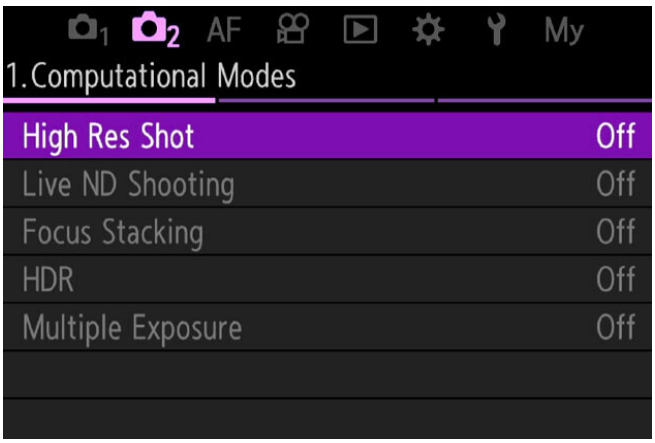
The release of the OM-1 did come with a few firmware issue which seem to have been fixed with the release of firmware 1.2 at time of writing. You should update before making any changes but please follow the instructions carefully. Firmware downloads and instructions are available on the Olympus website.

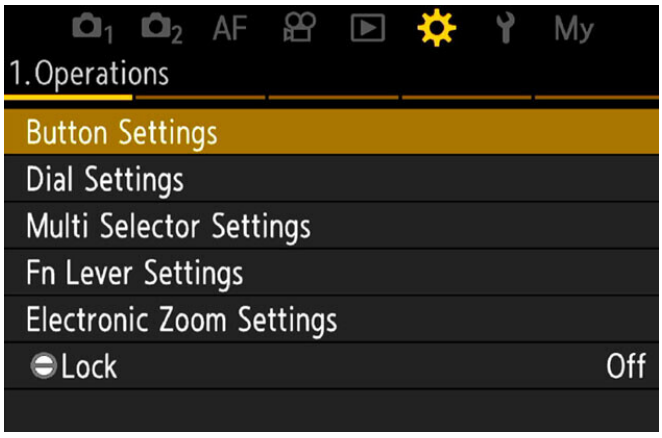
MENUS

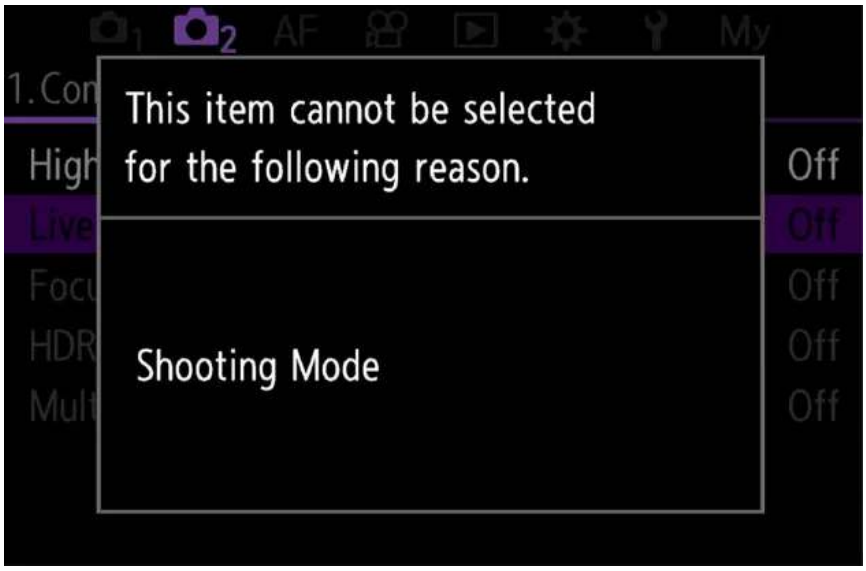
The Menu has had a significant update. Now not only is the navigation horizontal, all the sections have been colour coded and rationalised so that functions are arranged into more logical groups. All of the Computational Modes such as High Res and Live ND are now under one tab. There are still many sub-sections but they are easier to understand.Navigation is simple using the front and rear dials and the read D-Pad.







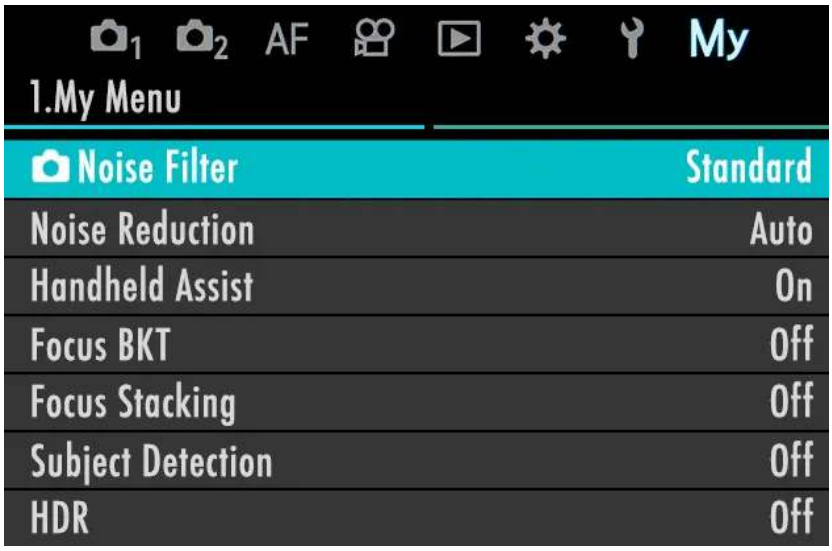




INFO POP-UP

Particularly useful is the new info pop-up when an item cannot be enabled or selected. Previously there was no information provided so it was a matter of trying to figure it out, sometimes not as easy as it sounds. Now at least we are given a clue; in this instance trying to enable Live ND the warning indicates it cannot be enabled because of the 'Shooting Mode'. Live ND is only available in S or M and the camera was in A.

MY MENUS



My Menu is a way to save items in the menu to your own custom page, and it is really handy to save time and to further assist when setting up Custom Modes.

CAPITALISE ON MY MENU

There are 5 tabs to add most used settings. On any menu function press the red *Record* button to add to My Menu. In My Menu pressing Record again allows rearrangement of items in any vertical order, or on another tab.

Don't rush to add everything filling up all the tabs, or you may as well just use the main menu. Remember these are shortcuts for your most often used items, I keep it to a max of two tabs only.

There are times when you may run out of buttons to map settings to, even when setting up Custom Modes. For instance BKT (Bracketing) when saved to a button previously had a top menu allowing access to other bracketing modes such as Focus Bracketing. This has now gone, so if I want to access Auto Exposure Bracketing and Focus Bracketing quickly I would use two buttons which is too many.

Instead I save Focus BKT / Stacking to My Menu, I don't use them as often and when I do I have very easy access without going through menus trying to find them. Save functions you want quick access to in My Menu, and arrange the items and tabs in order of priority.

The difficulty is which items to add? Don't rush it and start filling all 5 tabs otherwise you're back to square one. You will find as you start setting up Custom Modes you will hit settings or features you cannot add to a button or set as a default setting, so add them to My Menu. Start off adding just a few items to see how it works.

Noise is added for easy access when I want to switch it off, as is Subject Detection, although both of these I deal with in Custom Functions so they are a little redundant, but still I have easy access.

HDR is added because I will bracket when light in a scene is challenging. You will see in the Custom Modes how I map Bracketing to a button. Bracketing allows various options up to 1 Stop, whereas HDR allows up to 3 Stops. Why Olympus continue to separate these is a puzzle, but this is how I get around it.

MENU START POSITION

Settings here allow you to decide which Menu tab you'd like to be the first to display. Options are obvious, the last position you were in, Camera 1 (Basic Settings) or My Menu which can be very useful.

Gear 2.Operations/Menu Cursor Settings/Menu Start Position>

My preference is to set My Menu as the start position for quick access to all my saved settings, for reasons such as HDR mentioned above.

By setting My Menu as the start position I can quickly access any of the functions I have not been able to map to a button or save as a Custom Mode.

→ TIP Setting My Menu as your start position can be annoying at first. Inevitably as you start exploring settings and customising, reading, and testing how settings work, you will be in and out of menus and it will go to My Menu every time.

Set it to Recently and then change it to My Menu as your last customisation. You can also save the Cursor Position, or which item on a page is highlighted, as a further quick aid if required.

SETTING UP MAIN SETTINGS IN THE MENU

Before setting up any Custom Modes it's important to set all the main settings first in the menu. These will be the default settings and will save a lot of work getting them correct to start with.

There are settings which are very simple such as Image Quality (Raw/Jpeg), whilst others can be quite confusing and are hidden away in the menu. Some of these may change depending on what you want for Custom Modes, but setting basics first is good management and will save a ton of work later. They will also be recalled to your main shooting modes (PASM).

SUPER CONTROL PANEL

The Super Control Panel (SCP) is your quick overview of all your main settings. It is useful for quickly changing settings without going into the menu.

There are two ways to access settings, through the Menu and throughout the Super Control panel. The SCP is a quick overview of settings and has two modes, one by pressing the 'Screen' button (next to Menu) which disables Live View and can be useful to save battery life, the other is an overlay on Live View accessed by pressing 'OK'.

→ ***TIP*** *Both are touch enabled. Tap to select, use the Rear Direction Pad to move, and the dial to change setting.*

Access settings using the SCP and the Menu to set Basic Settings. Many are only found in the Menu.

Let's start setting things up. Some options are personal preference. Items omitted are because default settings are fine. Items marked 'Leave Default' are to draw attention to default settings being acceptable. Go through your menu and starting making changes as shown below. This may look daunting but you'll be surprised how quick it is to do, and you'll learn the menu at the same time.

1 SHOOTING MENU

1-Basic Settings/Image Quality

Custom Mode	Leave for now
Image Quality	LSF/RAW
Detailed Settings	Leave Default
Image Aspect	4:3
Image Review	*20Sec
Shading Comp	Off

2-Picture Mode/WB

Picture Mode	3
Picture Mode Settings	Enable All
WB	WB Auto
Keep Warm Colour	On
Colour Space	sRGB-See Notes

3-ISO/Noise Reduction

ISO A Upper/Default	**12800/200
ISO A Lowest S/S	Leave Default
ISO Auto	P/A/S/M
ISO Step	1/3 EV
Noise Filter	**Standard
Noise Reduction	**Auto
Low ISO Processing	**Detail

4-Exposure-All Default

5-Metering

Metering	Evaluative
Metering AEL	Auto
AEL Auto Reset	No
AEL By Half-Press Shutter	Yes
Metering Multi Shot	Yes
Spot Metering	Enable All

6-Flash-All Default

7-Drive Mode

Drive	Single
Sequential Shooting Settings	***Enable All-Leave fps at Default. We will change these in C Functions)
Self Timer Settings	Enable All
Anti Shock Settings	****On
Silent Settings	Set as desired →Waiting Time 0 →Noise Auto

8-Image Stabilisation

Image Stabilisation	S-IS AUTO
Image Stabiliser	Fps Priority
Half Press Stabiliser	On
Handheld Assist	[1]On
Lens IS Priority	Off

sRGB v AdobeRGB- These are two different colour spaces and you will find many conflicting opinions about them, not to be confused with Color Profiles, Vivid, Natural etc. AdobeRGB has a wider gamut of colours and some prefer to use this, however sRGB is the standard used by nearly all print labs. The internet doesn't have a colour space as such although most websites use sRGB as do mobile devices. Processing an image in one colour space and then outputting to a different colour space can lead to colour shift. As there is so little difference between the two you will actually see I always use sRGB.

*__Image Review Seconds__- Controls how many seconds an image displays on the screen or Viewfinder when taken. This is personal Preference, I set to max 20s because the image will display in the viewfinder without having to press the 'Play' button and I don't have to move my eye from the viewfinder. A quick half press of the shutter will dismiss it.

** **ISO Upper and Default**- Set the upper ISO limit for Auto ISO. This is personal choice and you can set whatever you like. I don't need ISO so high so set 12800. ISO 200 should be default. ISO below 200 as are computational and result in reduced dynamic range.

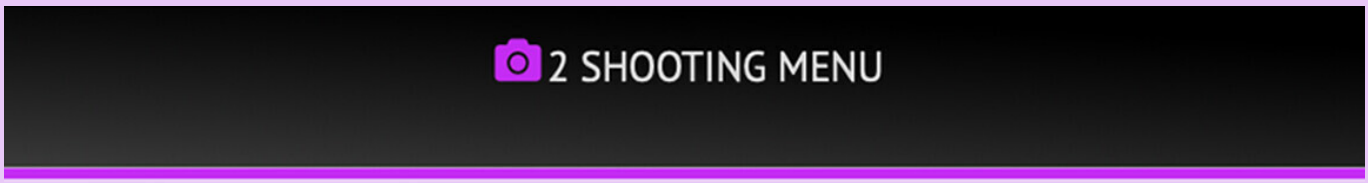
****Noise Filter and Noise Reduction** are two very different things. Noise Filter reduces noise in an image but will only affect Jpeg images. Noise Reduction reduces hot pixels in long exposures and does apply to RAW images. Leave at Standard and Auto for now.

****Low ISO Processing-** is best set to Detail. In most cases we want to preserve detail over drive speed. The obvious situation when drive speed is more important is Wildlife etc. You may want to change this to Drive when you save a Custom Mode for Wildlife, however you are unlikely to be using a low ISO.

*****Sequential Shooting Settings**- Enabling all gives access to all choices. Leaving the default fps means we can edit them later in Custom Functions.

******Anti Shock**- If enabled the shutter will always default to electronic first curtain shutter when under 1/320s to prevent shutter shock. Make sure it is set to 0 seconds to avoid delays.

[1]**Handheld Assist**- Displays a box which shows how steady you are holding the camera. A centre point moves to show steadiness and bars move to show levels. Test first because you may find it obtrusive, but I find it useful. Adding this item to MyMenu gives quick access if you would prefer to enable on the fly.



1-Computational & 3-Bracketing

All Off- We will set these up in Custom Modes.

2-Other Shooting Functions

Bulb/Time/Comp→	Bulb/Time Timer 30min
	*Live Comp Timer 3h
	*Bulb/Time Monitor 0
Other Settings	Leave Off

***Live Composite Timer**- Changed according to the shoot, however the default is too low, 3h is a better starting point.

****Bulb/Time Monitor**- Rear Screen brightness set to -7 by default to save battery life, however it is too dark. Set to zero for standard screen brightness.

AF AF MENU

1-AF

AF Mode	S-AF/MF
AF+MF	On
Starry Sky AF	Add to My Menu
AF Half Press	Yes All
AF-ON in MF	Yes (we will set MF to a button)
Release Priority	Yes All

2-AF

AF Illuminator	Personal Choice
AF Area Pointer	On1
Face & Eye	*Off
Face/Eye AF Button	**→Face Priority
	**→Face Priority
Subject Detection	***Off
Eye Detection Frame	On-Displays Frame

3-AF

C-AF Sensitivity	Default
C-AF Centre Priority	Enable Cross/Mid/Large
Other Settings	Leave Default

4-Movie AF-All Default

5-AF Target Settings	
AF Target Mode	Enable All/Single/Cross/Mid/Lg
Enable Custom 1	Set with 1×1 for finer control
Orientation Linked	No
Set Home	****Target Mode All
	Target Point →Set all to centre
Select Screen Settings	Leave Default
Loop Settings	Leave Default
AF Target Pad	[1]Off

6-MF	
MF Assist	[2]Enable Magnify/Peaking/Indicator
Peaking	Set to Preferences-I prefer white.
	Intensity Normal Brightness Off
Other Items	Leave Other As Default

*__Face and Eye-__ Leave off, we will set up a Custom Mode to enable this.

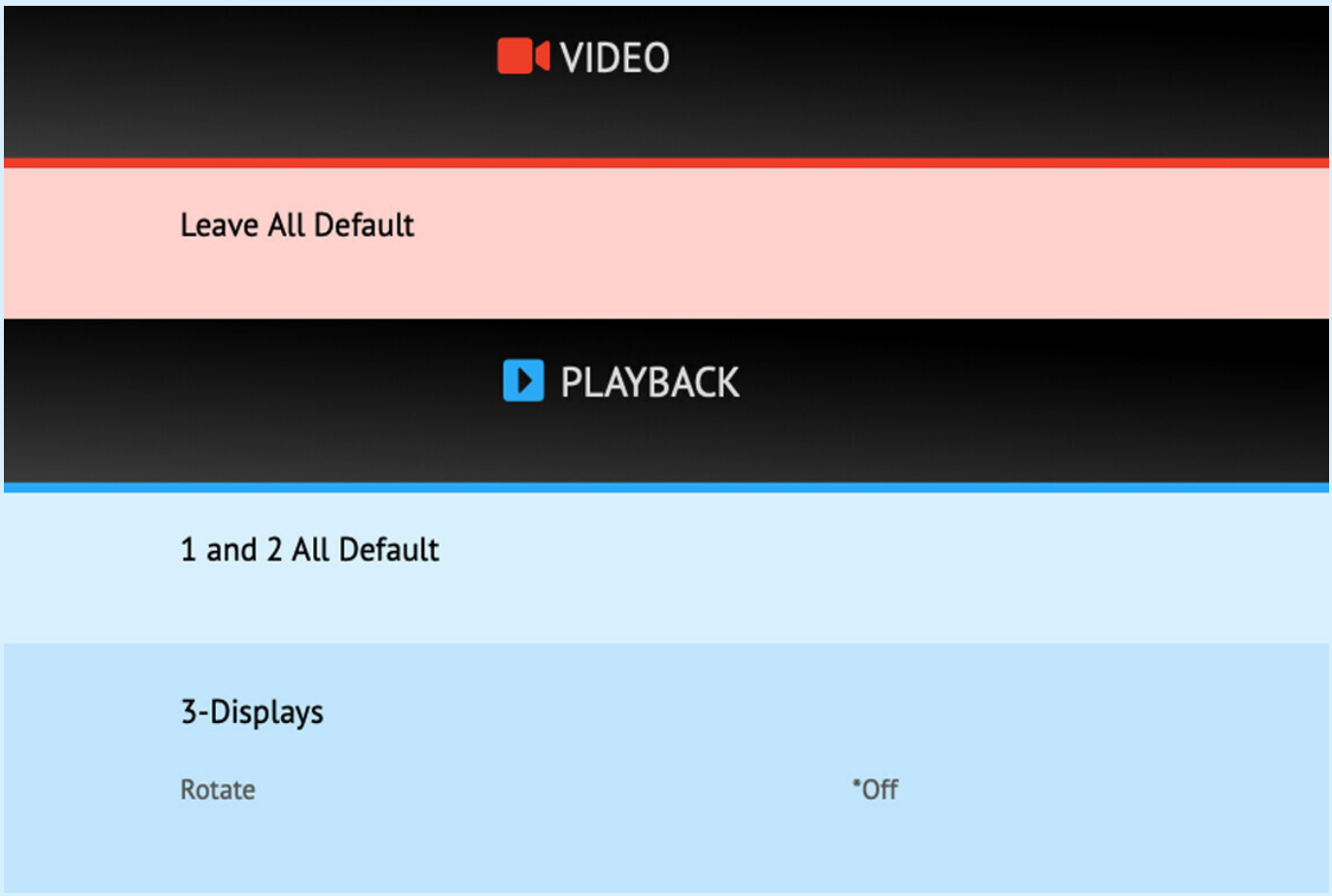
** __Face/Eye AF Button__- Select Face priority or AF Priority. Selecting Face Priority will move the focus point to the detected face.

***__Subject Detection__-Leave off, we will set up a Custom Mode to enable this.

****__Set Home/Target Mode-__ All-Selecting centre means the focus point will return to the centre when the rear Jog button is pressed. This is quite a useful feature.

[1]__AF Target Pad__ OFF- On allows the focus point to be set by dragging a finger over the screen when using the EVF. In practice not very comfortable to use.

[2]__MF Assist__- Enable Magnify/Peaking/-Whist it can be annoying when manually focussing to have the view zoom in meaning you cannot see the whole scene, still enable them. We will use Peaking applied to a button to split the functions and give the best of both features



Video- Leave all default unless you want to investigate using it further. Video is beyond the scope of this guide.

***Rotate**- Obviously personal preference, however setting On means portrait orientation images will display vertically when the camera is in landscape orientation. I prefer it to fill the screen and rotate the camera for a bigger view.

1-Operations

Buttons	Assign (map) functions to buttons. We will return to this later.
Dial Settings	Leave Default
Multi Selector	Leave Default
FN Lever →	→Function *Mode 2
	→Video Default
	→Fn/Power FN
Other Settings	Leave Default

2-Operations

LV Close Up	Mode 2
Lock	Off
Priority Set	No
Menu Cursor	**See Notes
Press & Hold	Leave Default
Other Items	Leave Default

3-Live View

All Settings	Leave Default

4-Information

EVF Style	Style 3
***Info Settings	Image Only
(+ Screen Info Settings)	→Info1 – Histogram / Levels
	→Info2 – Highlights / Shadows
Level Gauge	On
Video Info	Leave Default

4-Information

EVF Style	Style 3
***Info Settings	Image Only
(+ Screen Info Settings)	→Info1 – Histogram / Levels
	→Info2 – Highlights / Shadows
Level Gauge	On
Video Info	Leave Default

5-Grid/Other

Grid Settings	→Colour Preset 1
	→Displayed Grid 3rds
	→****Colours Default
Video Grid	Leave Default
Multi Function	[1]Enable All. See Notes
Histogram	Leave Default

*__FN Lever Mode 2__- This appears quite complicated at first. Setting this allows additional options:

1/Changes the front and rear dial to access WB/ISO

2/ Changes Auto Focus Target Modes

3/Swaps between the mode set on the top mode dial (eg PASM) or video mode.

1/ is redundant because we will set buttons to do this and there is a default ISO button. 3/ is redundant because there is a Video Mode on the dial. Select 2/ because it is more useful to set different focus modes.

Set Focus Modes– With the lever in Position 1 set AF Target Mode (Focus Points) on the rear Super Control Panel to Anti-Shock Single. Now just above it set the AF Mode to S-AF+MF (Single Auto Focus + Manual Focus). Move the lever to position 2 and, leaving the Focus point as single, set the AF Mode to C-AF+TR/MF. This sets it to Continuous AF with Tracking. Once set the camera remembers the two settings for each lever position.You can set Target Mode and AF Mode to any you like, I recommend the two mentioned.

****Menu Cursor Settings**– See “Menu Start Position” on the Menu Guide page. This setting allows the Menu page position and the highlighted item to be saved when the menu button is pressed. I recommend setting this as the last setting.

*****Info Settings**- There are two Info Settings, Image Playback and Rear Screen/EVF. In each menu select the items you want to have displayed with each press of the Info button. For instance no information for a clear view, Histogram, Highlights/Shadows. This is a very useful feature, experiment to see which suits you, try to get it right before moving on the Custom Menus. Settings I use are shown.

******Grid Colours**- I recommend using Preset 1 grey so that it is not too dominant. Default options are grey or red which can be customised to other colours. Before experimenting with colour write down the defaults first to reset (Grey 38/38/38/75%-Red 180/0/0/75%)

[1]**Multi-Function**- Allows various items to be displayed when Multi Function is mapped to a button. Press/Hold and turn the front dial to select different options. We will set a Peaking button using the Multi Function to give quick access to other functions.

SETUP MENU

1-Card/Folder/File

Card Formatting	Save to My Menu
Card Slot Settings→	*Auto Switch-See Notes
Assign Save Folder	*Optional-See Card Notes
File Name	Auto
Edit File Name	**Optional

2-Information Record

Lens Info	***Off
Dpi Settings	Default 350
Copyright Info	****On

3-Monitor/Sound/Connection

Leave All Default

4-WiFi/Bluetooth

Only needed when pairing a device	Leave All Default

5-Battery/Sleep

Default other than below

Backlit LCD	Hold
Sleep	1min
Auto Power Off	1hr
Quick Sleep	Off

6-Reset/Clock/Language

Settings here are obvious allowing date, time and language to be set, along with information on firmware version. Other settings are as below.

Reset/Initialise	!Reset Settings
Level Adjust	[1]Recalibrate Level
Pixel Mapping	[2]Remove Dead Pixels

*Card Slot Settings-This can be quite confusing because of the options.

In→Save Settings there are 6 options to choose from:

1. **Record to Assigned card only**

2. **Auto Switch**-Rolls over from card 1 to card 2 when 1 is full.

3. **Saves to both cards** with individual settings. When card 1 is full card 2 cannot be used.

4. **Same as 3** but card 2 will be used when card 1 is full if there is free space.

5. **Saves to both cards** with same settings, effectively a backup copy. When card 1 is full card 2 cannot be used.

6. **Same as 5** but card 2 can be used when 1 is full if there is free space.

My preference is for 2. Auto Switch. However using individual settings can be useful. You could save Raw to one card and Jpeg to another, or even save a different size Jpeg to card 2 if you want smaller images you can share online immediately. You could even set Custom Modes and have Long Exposure images with Live Time, or sequential images from Pro capture saved to card 2. Obviously it isn't a good idea to have Jpeg saved to one card, then set a Custom Mode with for instance Pro Capture shots saved to a specific card, it would defeat the object with images being mixed up and get complicated. A way around this would be to assign a saved folder. Set the preferences you want when setting a Custom Mode.

Personally I always suggest keeping it simple, have one card roll over to the next, have Raws save to one and Jpeg to another, or have the second card as a backup of the first.

Do remember you need equally fast cards if you intend to write raws to both slots. I use Kingston SDR2 V90 300mb/s and have found these to be excellent.

(*) Individual Settings – Select Mode 3 in Save Settings. Then go to to the first menu (Green) Camera 1 (1. Basic Settings) item 2 Camera Image Quality. Select the settings you want for Card 1 and 2. In Detailed settings you can set 4 sets of sizes for Jpeg images.

****Edit File Name**– Optional, default is fine however if if you have multiple bodies it can be useful to edit the file name so you know instantly which body the file came from. For instance I set OMS1 for the OM-1 and EM13 for the EM-1 MKIII.

*****Lens Info Settings**– Used for non-m43 lenses when the camera cannot read the built in chip and stabilise effectively. Adding info for a lens will provide stabilisation. 10 lenses can be added. I have both of my Helios manual lenses added.

******Copyright Info**- Amateur or Pro is irrelevant, you absolutely should have your name here. It is saved in Exif and proves your copyright ownership of an image.

!Reset Settings- Caution. This will reset the camera. Select to reset all or leave basic info such as date and time. Use only if you need to reset camera.

[1]**Recalibrate Level**- The in camera level can go out of true and does need recalibrating from time to time. [2]Remove Dead Pixels-It is possible for the rear screen/EVF to develop dead pixels which you will notice. Running this utility generally removes them.

MY MENU

A Custom Menu that is user created.

For more information see the previous section "**Menus**" where it is discussed in detail.

You should treat this as a place to save most frequently used items, items you do not use frequently but have difficulty locating, and as a way to supplement Custom Modes. For instance you may set a Custom Mode and would like another with one difference; adding the item that is different if available can save you a Custom Mode.

Items here can be saved in the order you create by pressing 'Record' and can be arranged across 5 tabs.

As previously mentioned it makes sense not to use all five tabs otherwise you are simply creating another place to look for menu items. Tabs cannot be named unfortunately which would solve that problem. Keep to 2 tabs which I think is enough.

CUSTOMISING BUTTONS

SETTING UP YOUR FIRST SET OF BUTTONS

In the previous section we went through the main menu and set it up accordingly. Now we will look at how to set up the various buttons on the-OM-1, the options available, and how to change them. They will form the defaults for the standard PASM modes and the base for your Custom Modes.

FAMILIARISE YOURSELF

First get to know which buttons can be changed and how to do it, it is actually very easy.

→*Custom Menu(Cog) 1. Operations/Button Settings.*

From here you will see buttons we can change. Note the Lens Fn button can be changed and also the additional battery grip if you use one.

ITEMS NOT AVAILABLE TO CHANGE

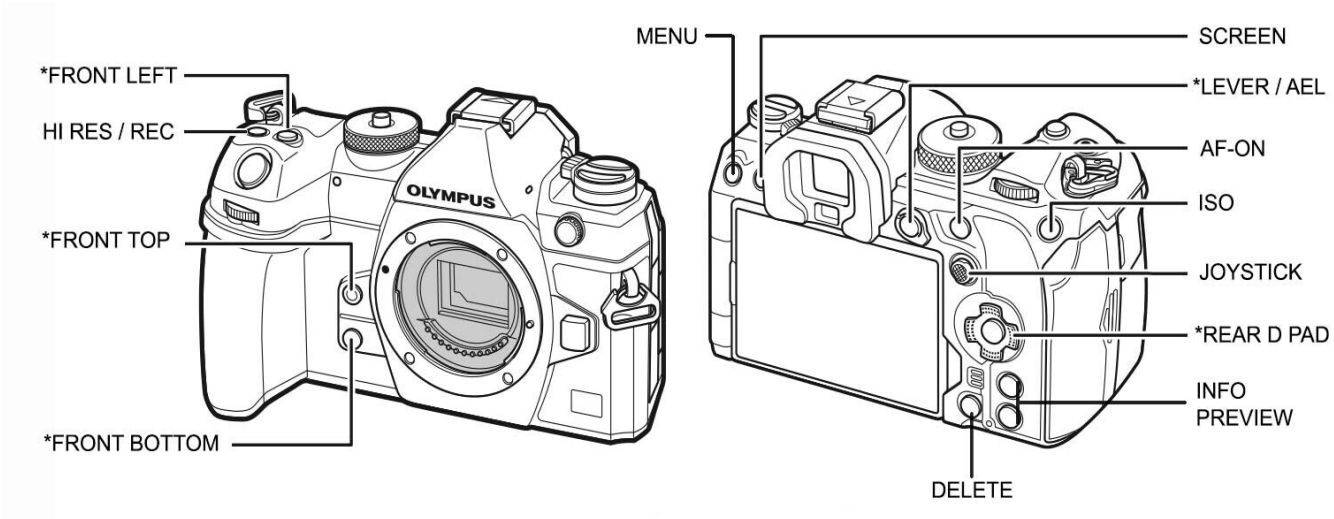
1. Menu & Screen Buttons
2. OK, Info and Trash Buttons
3. Image Review/Playback Button
4. Top Right Drive/Timer/Flash
5. Top Right AF/Metering
6. Mode Dial Exc C1-C4
7. Rear D-Pad 'Up/Right'

Also important to note are buttons and functions which are not available to change. Some would make little sense to change and others would be dangerous. Imagine changing "Menu" and then not being able to access it?

FIRST BUTTON SET

Set your buttons up as below. Although you can change some of these suggestions to your own preferences, it's important to keep a logical rationale. Don't make them too complicated because we will change some of these further in *Custom Modes*. Read the section "Custom Modes" to get a sense of how this button set works and fits in with the overall scheme. You may want to make a plan of your own, planning is key. View this first set as a starting point and remember that they are the buttons that will be active in standard modes such as A and S. Also see the Notes below. Set the dial mode to A, S or M and starting going through the button menu.

(Cog)Custom Menu>1.Operations>Button Settings. Make a note of the default button settings just in case you want to reinstate them without doing a reset.



Only buttons shown with * will be changed. The others will stay as default.

BUTTON	FUNCTION
TOP-LEFT	AE-BKT (Bracket)
RECORD	HRES (Default)
ISO	ISO (Default)
AF-ON	AF-ON (Default)
AEL	HDR
LEVER 1	S-AF/MF
LEVER 2	C-AF/MF
D PAD RIGHT >	MF (Manual Focus)
D PAD DOWN∨	WB (White Balance)
FRONT BOTTOM	MULTI-FUNCTION (Peaking)
FRONT TOP	NIGHT LV
LENS	DIGITAL ZOOM

HI-RES, ISO, AF-ON

These are all default and there is no need to change them, leave at default.

AE BKT (BRACKETING) AND HDR

As already mentioned HDR has further bracketing options available which are not included in the BKT menu for some strange reason, hence why I save this as a button. Press/Hold and turning the front wheel allows access the options. Auto Exposure Lock is disabled which I rarely use. If I need to lock exposure for a number of frames for panoramics for example I use Manual.

See the Section '*Technique-Exposure Bracketing*' for a detailed explanation. You may feel Bracketing is not important to you or you are happy to do it manually by taking additional shots over and under-exposed, in which case you can select other items for these buttons. Personally I would retain at least one, AE-BKT would be my choice, map it to the top left button and choose another function for the AE-L button or leave as default. Options may be Live ND or AI Tracking.

LEVER 1 & 2

You will have already set this in the Basic Settings. If not, in
Menu>Cog 1 Operations>FN Lever Settings> Set Mode 2.
This allows the lever to be programmed to different AF Settings which are more useful than Mode 1 and 3.

Setting the lever is very easy, exit the menu and press the D-Pad centre 'OK' button to access the Super Control Panel. Now with the Lever in Position 1 set the Focus Target to the small single point, or the C1 setting with 1×1 set which allows for much finer control over where the focus point can be positioned. Also set AF Mode to S-AF/MF. Now move it to position 2 and change it to C-AF/MF (Continuous AF). Once each is set they will be recalled by switching the lever position, and they can be set different for different Custom Modes but do keep it simple to avoid confusion.

Setting MF allows manual focus with the lens ring whilst still in Auto Focus. I find this quite handy, allowing me to check my focus if needed. Do be aware however that if you change focus with the MF ring once you press the shutter AF is again active and your focus will change again. Having MF mapped to a button means I can quickly swap to Manual Focus (see below) and use the rear AF-ON button for Auto-Focus. This is Back Button Focus, when the shutter release and AF are moved to independent buttons rather than the shutter button performing both. Once each lever position has been set they will will be recalled automatically.

By setting two different options on the lever you have great flexibility. You could set L2 position with C-AF + Tracking (see AI Detection before enabling Tracking) if you wish, or set a different AF Target pattern (the focus grid size). This is where experience matters but don't worry too much, you can always change it as your experience grows.

REAR DIRECTION PAD

When setting options to the 4 way Direction Pad on the rear of the camera first select 'Direct Function' to access other options. Do note that as default the D Pad sets focus point position by pressing any direction button. When setting the D Pad to 'Direct Function' you do not lose the ability to move the focus point (the joy stick is just above and serves this purpose too). Press the left Direction and focus point position is activated again, returning each button back to the original function temporarily. In other words the D Pad can be set to multi-purposes other than the default.

MF (MANUAL FOCUS)

There are times when having the lens in manual focus is essential. When for example using a physical ND filter for a long exposure, focus has to be set before inserting the filter and then locked to manual otherwise the lens will try to focus again when the shutter is pressed. Many times it will be too dark and the lens will hunt being unable to achieve focus through the filter. Shooting panoramic images it is preferable not to refocus for each frame.

The obvious solution is to use manual focus, but what if you prefer like me to auto focus? I rarely focus manually, I find AF faster and more convenient and despite what you may see online it does not mean I'm not a 'proper' photographer. Alternating between AF/MF with the lens clutch is erratic and best avoided, if you use auto focus and then pull the clutch to manual the focus is often disturbed. And what if using a lens without the clutch? For this reason I always avoid using the lens clutch and map MF to the rear D Pad right direction for convenience. You could also set it to the lever as an alternative.

Another option is using Back Button Focus.

Back Button Focus is simply setting the shutter button to shutter release only, ie taking the shot, with AF set to a different button. The OM-1 is already set for BBF with the inclusion of AF-ON when the focus mode is set to Manual. When the AF mode is set to MF through the menu or the Super Control Panel the shutter button acts as a shutter button only (not AF) and AF is achieved with the AF-ON.

Do note however the AF-ON is deactivated if the lens is set to MF *with the clutch*. Previous cameras (EM5-EM1) allowed the Direction Pad Right> to be mapped to MF, but it was removed in the EM-1 MK3 meaning BBF had to be set up. BBF is permanent and it is not a feature I like to use all the time, so an alternative was to set the lever functions (Position 1 S-AF/MF, Position 2 MF) then set AF-ON to the rear AE-L Button and disengage the shutter button half-press AF. The MK3 actually shipped with this set as default. This lost some flexibility to use the Lever for Continuous AF in standard modes.

This is the main reason for me why the inclusion now of the AF-ON button is so great. I still need a way to set the AF to MF without using the clutch and the easiest way without going into the menu is to map a button. Using Direction Pad Right> to MF is quick, I can Auto Focus then press D Pad > to activate MF and effectively lock focus, and the AF-ON is still active so refocus can be done if needed.

WHITE BALANCE

Shooting in RAW means you have direct access to WB and you can change it during post, and most photographers do not bother to change WB at all just leaving it in Auto. This is perfectly acceptable and I have Auto-WB set, but there are times when auto gets it completely wrong.

Sunset and sunrise, and at twilight the temperature of light can change beyond what Auto will get right. Blue Hour does have hints of blue tones but it is not electric blue, so being able to correct it quickly is useful. There are other ways to set WB, with the rear screen and the SCP, or by changing the functions of the lever, however setting it to the D Pad Down∨ is fast and easy to access.

MULTI-FUNCTION (PEAKING)

Setting Peaking is possible in two ways, by setting Peaking directly, or setting the Multi-Function option. Set Multi-function as the button, and then press/hold the button, turn the front dial and set it to Peaking. The advantage of using the Multi-Function button is you now also have access to other options. Check them out and see if you find any of the options useful.

We previously enabled Peaking and Magnify in the main menu (AF.6 Focus Assist), and as I said both can be useful and also annoying. Having Peaking set to a button can get around this. As the AF mode is set to AF+MF, turn the focus ring and the view will magnify and show peaking at the same time allowing you to focus accurately, but you cannot see the whole scene. Now press the Peaking button to enable peaking and manually focus with the focus ring, and the view will not magnify.

Enabling Peaking with the button effectively disables Magnify until you press it again. When using AF, pressing Peaking can also be used to show what parts of a scene will be in focus similar to Depth Of Field Preview. Keep in mind that as peaking shows high contrast edges it is not entirely accurate for DOF, but it is a good guide.

LENS Fn

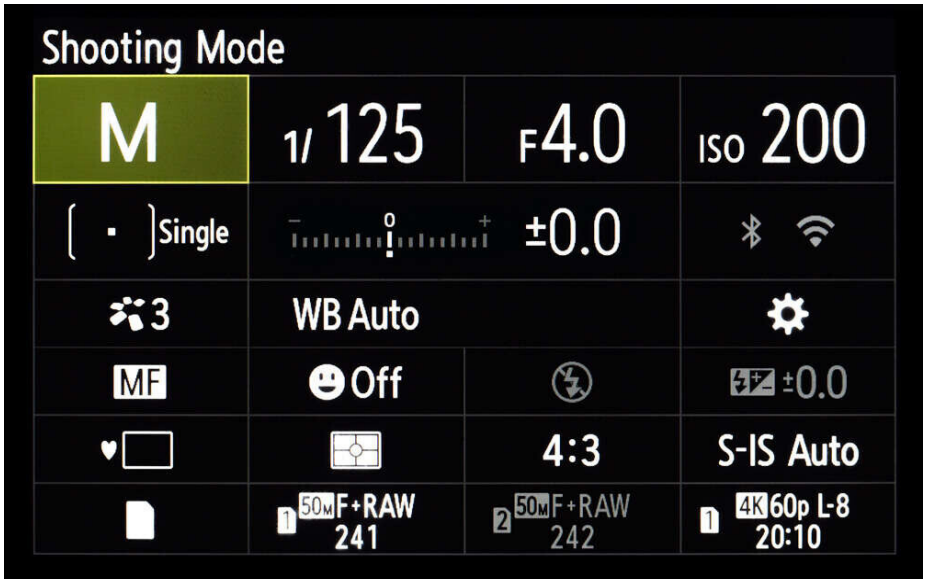
I set x2 Digital Zoom to the Lens L-fn button. Although it will crop the image it can be useful when in a situation that I do not have the focal length. Note that the Raw image will still be the full image with a frame showing the zoom level. Non-Pro lenses (and more being introduced) do not have the L-fn button so it's important to not set anything here you need constantly. For wildlife and long lenses you may prefer to set another function to the L-fn button such as Focus Limiter.

CUSTOM MODES

EXPLORING AND CREATING CUSTOM MODES

The final step in making the OM-1 your own, set up entirely to suit you. We will explore Custom Modes, how to create different sets and apply to the camera, and how buttons can be changed to suit each one.

WHAT ARE CUSTOM MODES?



Put simply, they are a group of settings which are then saved to the Mode Dial in C1, C3, C3 or C4 positions, to allow you to very quickly recall those settings without having to change everything each time. They can be as simple as you like, or as complicated as you like, it is really up to you how you 'design' your Custom Modes.

1-Shooting Menu>1.Basic Settings>Custom Mode

Creating Custom Modes is very simple, just change the settings you want to change, then go to the Custom Menu section and save them to the position you want. Once you set a CM, if you make any additional changes to it afterwards you must resave it or changes will be lost.

Do make sure you press 'ok'. Set the dial to the CM, then away and back again to check settings are saved.

MAKE A PLAN

The hardest part of setting up CM's is what to set up? This often comes from experience, so don't worry if you don't use them all, you may not have to. What do you tend to shoot, and will setting a CM save you time? Are you a wildlife/action shooter? If so you may want more than one set of settings, perhaps one for birds in flight and one for wildlife using different focus point settings and tracking modes, or you may be happy to change them on the fly. Are you predominantly a landscape photographer like me, or a macro photographer? The suggested settings in the table are aimed at a landscape photographer, but you can save whatever sets you like. Start off with a pen and paper and start to jot down some notes, making note of the genres of photography you are interested in, what main settings you think you would use and how they will differ from each other. This way you will start to make sense of how you can utilise the modes.

→ **TIP** Manuals are so hard to digest. Instead of trying to read it, go through the menu one setting at a time. Go deep into each setting without changing anything you're not sure off. Look up settings you don't understand, your memory retention will be higher.Although there are 4 modes, save your basic settings to one. Whichever shooting mode you favour (A, M, S etc), save it along with the buttons we set up, usually to C1. This becomes your default 'go-to' mode, and you have the security of knowing no matter what you change during a shoot it will default back to the saved settings next time. Switch the Mode Dial or reboot the camera to escape back to your defaults quickly.
→**Tip 2-Remember to utilise the MY Menu. You may find you're running out of CM's, or the difference between one and another is just one setting or variable which you don't want to set a CM for. Add the function to My Menu and set My Menu to be the start position when you press Menu. This will give you fast access to the variable without needing to set up another CM. See the Section "Menu" and "My Menu".

**SAVING TO MY MENU INSTEAD OF CUSTOM MODES

I do like to wander the woods in Autumn looking for fungi for some macro photography. I started a project *"Glowing Shooms"* (See *'Focus Bracketing'*) where multiple sets of macro images are combined, a standard set, and a set illuminated from above. These are then combined in Photoshop to remove the light source, the resulting image being a shroom that looks like it is glowing at twilight. On previous OM-D's mapping BKT to a button would also display a top menu giving access to alternative BKT modes such as Focus Bracket, which unfortunately has been removed in the OM-1. As Focus Bracketing is not a function I use often I simply add it to My Menu, and from my standard Aperture Priority C2 setting recall Focus BKT and switch it on, changing additional settings on the fly.

SAVING CM'S TO A BUTTON

You may have noticed in the Buttons menu that CM's can be saved to a button. You can absolutely do this, but I tend to avoid it. Firstly, a set of settings have to be saved to a CM mode on the dial, C1,2, etc. There is no way around it, so it's there and easy to access by the dial. Secondly, saving one to a button when it is already on the dial is a waste of a button and they are a precious resource if you have utilised them all. Also there are times when accessing a CM via a button can cause conflict, for instance you may have the camera in one mode, then press a button to recall a CM that has settings applied that the camera cannot perform because of the mode you are already in. Although there are some situations when a CM applied to a button can be useful I tend to recommend avoiding it. It can be a devil of a job to trouble-shoot why a setting has not been recalled and you may miss the shot.

A FEW IDEAS

If you're having difficulty thinking of CM's to set, it could mean you don't need to. Keep it simple, you can always set more up when you need to and as your photographic journey evolves. Here are a few ideas, just with very basic settings to get you thinking about the possibilities.

1- Create a CM for black and white art minimal images with a 1:1 square crop, or for street and architecture. Setting a crop or a black and white profile is not applied to RAW's, but seeing the effect as you shoot is better for composition. Changing the profile and indeed ratio are simple enough to access, but the point here is you can set up a CM for just about anything you like.

2-A CM for Astro/Milky Way using Starry Sky AF. Although these settings are easy enough to set without a CM, if you shoot the night sky often a CM would be useful for you.

3- Macro. Although I have Focus BKT saved in MyMenu, if macro is your thing you may want to have a CM saved which goes further.

4- Wildlife. We will save a CM which forms the basis for a wildlife setting, you may wish to have another if this is your genre. Perhaps an option for ProCapture with additional default settings saved, with a fast shutter saved as default.

SUGGESTED CUSTOM MODES

The table below shows the Custom Modes I have set on My OM-1, and in a very similar fashion on the EM-1 MK111. In fact when using multiple bodies I try to make settings as similar as possible for familiarity, other than features specific to different models. Note which settings are default across all modes, and where settings have changed for specific reasons.

Button	C 1 (B)	C 2 (A)	C 3 (M)	C 4 (S)
	LIVE TIME	**MAIN & BKTING**	**LIVE ND**	**WILDLIFE**
TOP-LEFT	–	BKT	BKT	SUB DETECT
RECORD	–	HRES	HRES	FACE/EYE
ISO	ISO	ISO	ISO	ISO
AF-ON	AF-ON	AF-ON	AF-ON	AF-ON
AEL	–	HDR	LIVE ND	NIGHT LV
LEVER 1	S-AF/MF	S-AF/MF	S-AF/MF	*C-AF/MF
LEVER 2	C-AF/MF	C-AF/MF	C-AF/MF	**C-AF/MF+TR
DIRECTION >	MF	MF	MF	MF
DIRECTION v	WB	WB	WB	WB
FRONT BOTTOM	PEAKING	PEAKING	PEAKING	AF LIMITER
FRONT TOP	NIGHT LV	NIGHT LV	NIGHT LV	PRE MF
LENS Lnf	D ZOOM	D ZOOM	D ZOOM	D ZOOM
OTHER SETTINGS				
FOCUS TARGET	SMALL	SMALL	SMALL	MIDDLE
DRIVE	SINGLE	SINGLE	SINGLE	SEQ SILENT
NOISE	OFF	AUTO	AUTO	AUTO
METERING	ESP	ESP	ESP	CENTRE

The Shooting Mode for each CM is denoted in brackets, (B=Bulb), (A=Aperture Priority) etc, and under each one a title is given to denote what the primary function of the CM is for. Settings shown with (-) means the button function is disabled.

You will notice how many of the settings are consistent across each of the CMs and I only change it if there is value in doing so for the particular mode. In many cases I do not need to make too many changes because I thought about it first and made a plan. You will also see how I do not take my own advice in some places, my Main Aperture Priority settings are saved on C2 not C1, and I have CM1 set for Live Time with one simple different to the main Live Time mode accessed through Bulb, with noise off. Let's look at each one, and why.

C1 – LIVE TIME I use Live Time frequently and it is easy to access through the Bulb setting. Noise is set to Auto which means that noise reduction will be enabled over 5 seconds, in other words always because there is little point using Live Time for any less than 30s. There are times when, for example at sunset when an exposure may run into minutes and I don't want to wait for noise reduction and risk losing the light, so noise is better off and dealt with in post.

I have Noise saved in My Menu for easy access, but I do forget if I have turned it off, so I have a CM saved with noise off. And, saving it to C1 means it is only one click away on the top Mode Dial from B, so I can quickly switch without even having to look. The logic here is a mode I use often, with a change I want to access quickly without risking it being saved for the next session.

This is a CM that suits my particular requirements, and means I need not worry about remembering to enable/disable Noise Reduction. You will probably think this mode not suitable for you and that is perfectly fine, use other settings for C1 instead. Note the last section below 'Expanding CM's to 5'.

C2 – MAIN + BKT My Main Mode with all the buttons and menu options I want as default saved. No matter what I change during a session I know it will return to default the next time I change the Mode Dial or switch the camera off. I tend to prefer Aperture Priority over Manual because there is actually little difference between the two with Olympus. I can set aperture and turn the front dial for Exposure Compensation which alters the shutter speed, it is the same in essence as Manual where the rear dial sets Aperture and the front Shutter. In A mode exposure compensation is achieved by altering the shutter speed, the same as in M but with a different label.

I often Exposure Bracket so having this as an option suits me, and mapping HDR to the redundant AEL gives me access to further settings. As said before, I do wish Olympus would simply merge these settings into one.

Metering is ESP, or evaluative, in most modes. With previous versions such as the E-M1 MK3 enabling bracketing did not enable sequential drive mode, which meant having to change the drive, manually pressing the shutter or setting up another CM. There is a way to set up a Custom Self Timer as an alternative which also meant changing drive modes so for me it was just as easy to set the drive mode instead. Thankfully now the OM-1 sets sequential drive when BKT is enabled. Metering Mode is ESP.

To me there is little point using any other because I make judgements myself and use Exposure Compensation along with the Histogram to set exposure. I also set Night LV to a button because it is useful to boost the screen when in very low light. In most cases you would save your default mode to C1.

C3 – LIVE ND Live ND is a great feature and has been made more useful on the OM-1 by expanding it to ND64 6 Stops. It is only accessible in Shutter Priority or Manual because it is a computational mode, so I have CM3 set for this. In Manual Auto Exposure Lock is again redundant because whatever aperture and shutter speed you select determines the exposure, it will not change and there is no need to lock it, so I map Live ND to AEL instead. I also have the advantage of all the other settings being saved as default for each new session. Note-If you prefer Manual this could be your default setting for C1 and you could make adjustments to buttons to suit your needs.

C4 – WILDLIFE My 'emergency' quick mode for action and wildlife. I am not a wildlife photographer so those that are more dedicated to this genre may want additional CMs for it.
BKT and Hi Res are obviously redundant for wildlife so I use these buttons to map other features that are more useful such as PreMF and Subject Detection. A Press/Hold and turn of the front dial gives quick access to other settings.

Using Shutter Priority the shutter is saved as a default at 1/1000s with Auto ISO at an upper limit of 12800, and then manually changing aperture to balance the exposure.

Of course you could opt to save this mode with ISO set to whatever you want and not use Auto ISO for more control, ISO is easy to change with the dedicated button. You may also decide to save this mode as Manual Mode, or Aperture Priority, what matters is you select the shooting mode you are most comfortable with.

Metering is Centre Weighted, I find Spot to be too specific although it would benefit when you have a bird or animal that is very light coloured. I find Centre Weighted a good happy medium.

Drive mode is Sequential Silent at 20fps (Menu 1.7 Sequential Settings). In SH1 and SH2 the number of frames can be set. I leave them at default so that if I do want to increase frames I can quickly change to SH2 50 fps. Remember that the higher the number of frames the faster you will fill a memory card, just a short session can easily result in a few thousand images to review. Metering and focus is maintained, whereas in higher settings such as 120fps in SH1 they are not, only the first frame will be focused.

There are situations when high frame would be desirable such a Kingfisher diving and capturing the moment just before it hits the water is a challenge. In a situation such as this Pro Capture may be an option setting the number of frames you want to capture as soon as the shutter is half pressed. Pro Capture attempts to remove the delay between your reaction time and pressing the shutter button to make sure the image is captured.

As soon the shutter is half pressed the camera will start to record images (you set the number and they are saved in memory, and then capture frames depending on the mode you have selected, Pro Capture (20fps) Pro Capure SH1 (120fps) or Pro Capture SH2 (50fps).

Notice also that I have Face/Eye, AF Limiter and Pre MF mapped to buttons in this Custom Mode. For this particular mode which is for wildlife the ability to limit the range a lens will focus over and prevent it hunting (AF Limiter) and being able to set pre-defined distance (Pre-MF) can be quite useful. Face/Eye Detection is mapped to AEL just on the off chance I want to capture people, the other settings mean I can do this easily and be sure of getting a shot. Naturally for a portrait which is more considered I would probably use Aperture Priority and take more time over it.

Lever 1 and 2 are both set to C-AF/MF and C-AF/MF+TR. With Subject Detection enabled Tracking does not need to be used, but there are instances when the A.I. mode doesn't perform so well particularly with a busy foreground or background. It was improved considerably with the 1.2 Firmware but having tracking with a small focus target and turning AI off will still give more flexibility. We will look at these settings in more detail in the 'A.I' Section.

→ **TIP** Although there are only 4 CM's there is a work around to expand it to 5 by using one of the standard PASM modes. If like me you have covered everything you need with a CM but still need one more just use one of your standard modes instead. I am not a wildlife photographer but recently started exploring it having bought the 100-400 and capitalise on the improved focus features of the OM-1. I quickly found sometimes I prefer to use Manual Mode instead of Shutter Priority, and with the drive mode set to SH2 or Pro Capture. As the AE-L button is largely redundant in the standard modes I mapped AI Detect to it and changed ISO to Auto. The downside of this is the changes affect all PASM modes, but that for me is fine because for any other situation I will use a saved CM. It is worth considering as long as you remember the changes affect all modes.

COMPLETE

Congratulations, you have now completed setting up your camera. I hope this has been useful and it will serve as reference for the future. Your settings will evolve and mature over time, change them as you progress and don't forget to save them. Next we will look at the technical aspect of creating images with your camera, the Exposure Triangle, Depth of Field and understanding apertures, and where to focus in a scene before moving on to Composition.

Just in case you are using the E-M1 MK3 the next few pages will explore how they are similar and how Buttons can be set for it. Feel free to skip to the next main chapter, the Exposure Triangle.

SETTING YOUR FIRST SET OF BUTTONS

This is predominantly on OM-1 Guide but it is still worth giving it's predecessor a mention, the Olympus E-M1 MK3 which is a fine camera. The purpose of this section is to highlight the differences and to show the MK3 is still very much a worthy and capable camera. This guide and many of the sections are still very relevant if you own the 1-MK3.

The OM-1 is the evolution of the E-M1 MK3. It can be considered as a hybrid, with the AF and power performance of the E-M1 X and the form factor and features of the E-M1 MK3 consolidated together, given a hefty boost of even more power and an upgrade of features.

No new features were added to the OM-1 which makes the 1-MK3 still a very good and more than capable camera. Computational Modes such as Live ND, High Res, HDR and Focus Stacking are applicable to both cameras, as are Live Time and Live Composite.

The OM-1 performs some of these better because of the new process, High Res processing is faster and Live ND is expanded to 6 stops rather than 5.

The body had significant upgrades with a better EVF, increased weather sealing, better performing batteries and the ability to charge in camera, and High Res dedicated to a button along with a new AF-ON button. Menus are now different with items being rationalised and rearranged into a more user friendly layout.

Although there are differences many of the sections in this guide will still apply with the only real difference being the location of items in the menus. The only section which will be irrelevant is the A.I Detect Mode which the E-M1 MK3 lacks.

COMPARISON

	OM-1	E-M1 MK3
Sensor	20.4 Stacked BSI CMOS	20.4 CMOS
Processor	TruePic X	TruePic IX
EVF	5.76 M Dot OLED	2.36 M Dot LCD
AF	1053 Cross Type Phase Detect	121 Phase Detect
A. I Detect	Motorsports, Planes, Trains, Birds, Animals	None
Frames Per Second	50fps C-AF / 120fps S-AF / 120fps Pro Capture	10fps C-AF / 15fps S-AF / 60fps Pro Capture
ISO	80 – 102,400	60 – 25,600
Weather Sealing	IP53	IPX1
High Res Mode	80MP (Tripod) 50MP (Hand-Held) 5s Processing	80MP (Tripod) 50MP (Hand-Held) 15s Processing
Live ND	6 Stops	5 Stops
Modes	High Res, Live ND, Live Time, Focus Stacking, Live Composite, HDR	High Res, Live ND, Live Time, Focus Stacking, Live Composite, HDR
Custom Modes	4	4

From the table above we can see the E-M1 MK3 is very similar in terms of features other than the A.I. Detect Mode. For landscapes the 1 MK3 may be all you need. What about customising buttons and setting up Custom Modes? There are a few differences:

1 – No AF-On button new to the OM-1. AF-On allows AF to still be achieved when in Manual Focus, although not if the lens clutch is in MF.

2 – No High Res dedicated button. On the OM-1 High Res is added to the Record button for quick access. With the 1 MK3 High Res cannot be added to a button, although it is still easily accessible through the drive mode or Super Control Panel.

There are two other differences I feel are significant:

1 – Back Button Focus. On previous EM models Manual Focus could be mapped to the D Pad > button which was removed on the 1 MK3, why I have no idea. You should by now realise I think it is important to be able to switch between Manual Focus and Auto Focus quickly (using external ND filters etc) without using the lens clutch. Instead the 1 MK3 shipped with Back Button Focus Pre-set so that the Lever 2 position is set for MF, AEL is set to AF-ON and the shutter is set for shutter release only. Simply put, auto focus, then put the lever to L2 and the camera will be in Manual Focus with AEL still providing AF. It works well and avoids having permanent BBF (Back Button Focus) set up.

2 – Some features when mapped to a button such as Bracketing will show on the bottom of the screen the various exposure EV options available, and on the top of the screen other bracketing options such as Focus Bracketing. The other options have been removed on the OM-1 which is a shame.

→ **TIP** The Back Button Focus setup shipped with the 1 MK3 is not needed for genres such as wildlife where the option to use the Lever for example as S-AF in position 1 and C-AF+Tracking in Position 2 is more suitable. Alter the settings of the lever through the rear Super Control Panel and save it to a Custom Mode. It doesn't have to stay in the default behaviour when saved in Custom Modes so set it to what suits your needs. Obviously the AEL button need not stay as default in a Custom Mode when it is not needed to activate AF or Exposure Lock.

BUTTON	FUNCTION
TOP-LEFT	AE-BKT (Bracket)
RECORD	HDR
ISO	ISO (Default)
AEL	Default AEL/AFL
LEVER 1	S-AF/MF
LEVER 2	Default MF
D PAD RIGHT >	White Balance
D PAD DOWN∨	Drive Mode
FRONT BOTTOM	MULTI-FUNCTION (Peaking)
FRONT TOP	Boost
Lens	Digital Zoom

ISO, AEL-AFL

These are all default and there is no need to change them, leave at default. If you are new to the 1 MK3 it may be that you have obtained a used model. Personally I would do a full reset and remove any settings so you can start from fresh.

AE BKT (BRACKETING) AND HDR

As already mentioned HDR has further bracketing options available which are not included in the BKT menu for some strange reason, hence why I save this as a button. Press/Hold and turning the front wheel allows access the options. Auto Exposure Lock is disabled which I rarely use. If I need to lock exposure for a number of frames for panoramics for example I use Manual.

See the Section 'Technique-Exposure Bracketing' for a detailed explanation. You may feel Bracketing is not important to you or you are happy to do it manually by taking additional shots over and under-exposed, in which case you can select other items for these buttons. Personally I would retain at least one, AE-BKT would be my choice, map it to the top left button and choose another function for the AE-L button or leave as default. Options may be Live ND or AI Tracking.

LEVER 1 & 2

As already mentioned above the 1 MK3 ships with BBF already set to the Lever Position 2 and it is worth retaining at least as a default. Position 1 is best with a standard small target AF point and S-AF which can then be further customised for Custom Menus. Save one CM with the lever at the default as a landscape Mode where the ability to switch quickly between AF and MF is very useful, and in other CM's it really is personal choice.

By setting two different options on the lever you have great flexibility. You could set L2 position with C-AF + Tracking if you wish, or set a different AF Target pattern (the focus grid size). This is where experience matters but don't worry too much, you can always change it as your experience grows.

REAR DIRECTION PAD

When setting options to the 4 way Direction Pad on the rear of the camera first select 'Direct Function' to access other options. Do note that as default the D Pad sets focus point position by pressing any direction button. When setting the D Pad to 'Direct Function' you do not lose the ability to move the focus point (the joy stick is just above and serves this purpose too). Press the left Direction and focus point position is activated again, returning each button back to the original function temporarily. In other words the D Pad can be set to multi-purposes other than the default.

DRIVE MODE

Drive mode can be quickly accessed from the buttons on the top left of the camera or the SCP, but I find the more I can control the camera just with my right hand the better. And it is better to have more than one way to access the mode.

WHITE BALANCE

Shooting in RAW means you have direct access to WB and you can change it during post, and most photographers do not bother to change WB at all just leaving it in Auto. This is perfectly acceptable and I have Auto-WB set, but there are times when auto gets it completely wrong. Sunset and sunrise, and at twilight the temperature of light can change beyond what Auto will get right. Blue Hour does have hints of blue tones but it is not electric blue, so being able to correct it quickly is useful. There are other ways to set WB, with the rear screen and the SCP, or by changing the functions of the lever, however setting it to the D Pad is fast and easy to access.

MULTI-FUNCTION (PEAKING)

Setting Peaking is possible in two ways, by setting Peaking directly, or setting the Multi-Function option. Set Multi-function as the button, and then press/hold the button, turn the front dial and set it to Peaking. The advantage of using the Multi-Function button is you now also have access to other options. Check them out and see if you find any of the options useful.

We previously enabled Peaking and Magnify in the main menu (AF.6 Focus Assist), and as I said both can be useful and also annoying. Having Peaking set to a button can get around this. As the AF mode is set to AF+MF, turn the focus ring and the view will magnify and show peaking at the same time allowing you to focus accurately, but you cannot see the whole scene. Now press the Peaking button to enable peaking and manually focus with the focus ring, and the view will not magnify.

Enabling Peaking with the button effectively disables Magnify until you press it again. When using AF, pressing Peaking can also be used to show what parts of a scene will be in focus similar to Depth Of Field Preview. Keep in mind that as peaking shows high contrast edges it is not entirely accurate for DOF, but it is a good guide.

LENS Fn

I set x2 Digital Zoom to the Lens L-fn button. Although it will crop the image it can be useful when in a situation that I do not have the focal length. Note that the Raw image will still be the full image with frame showing where the zoom was. Non-Pro lenses (and more being introduced) do not have the L-fn button so it's important not to setting anything here you need constantly. For wildlife and long lenses you may prefer to set another function to the L-fn button such as Focus Limiter.

CUSTOM MODES

Whilst I'm not going to cover all the possible options for the E -M1 MK3 here please take a look at the Custom Modes section for the OM-1.

You'll find many of the suggestions applicable and it should give you plenty of ideas of what is possible and what you can do. Bear in mind there are slight differences with buttons, in some ways the 1 MK3 is more flexible, and also remember frames per second are different depending on what you want to set up.

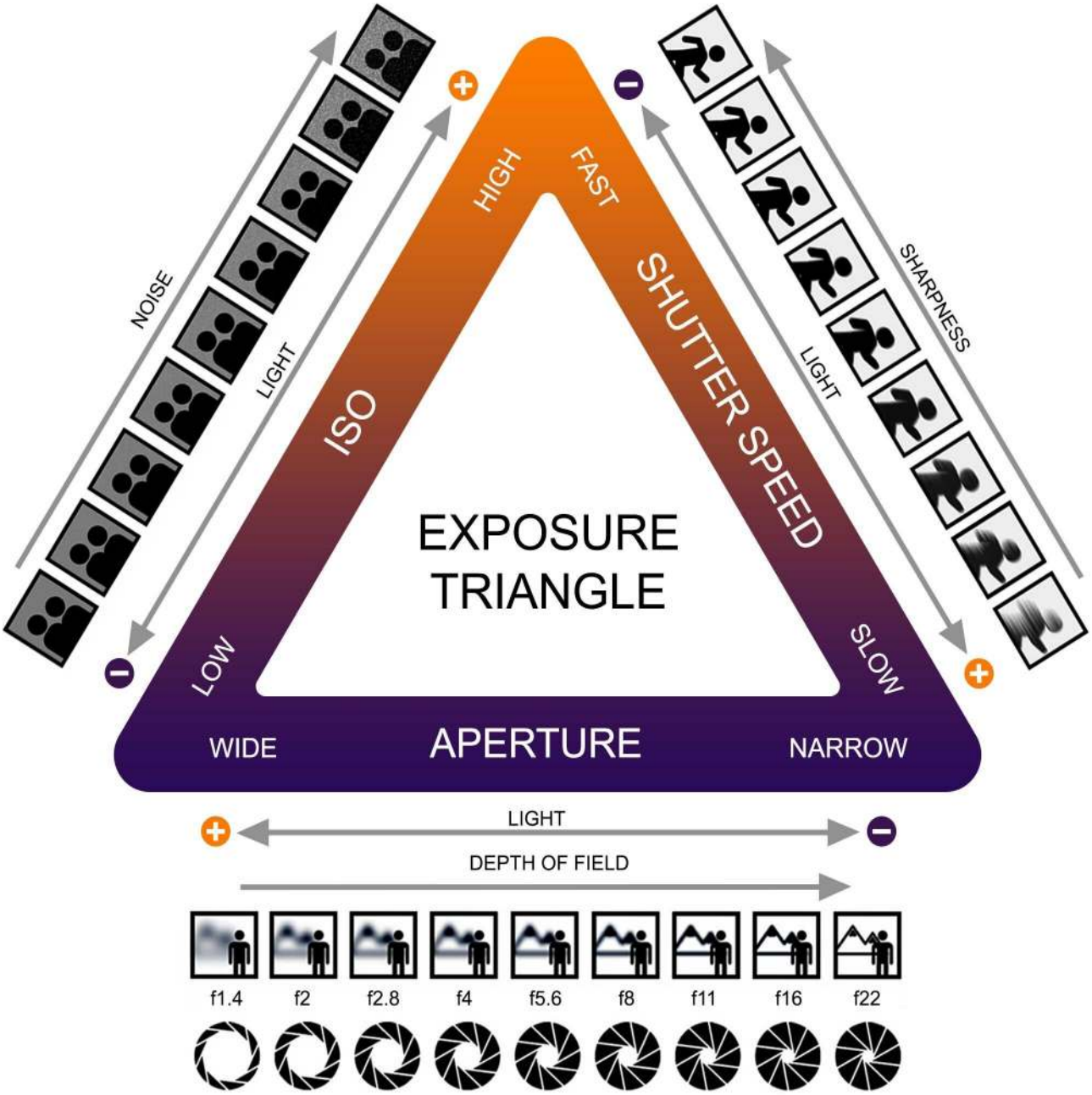
THE EXPOSURE TRIANGLE

EXPLORING CORRECT EXPOSURE

Exposure is a complicated thing with shutter speed, aperture and ISO to consider, all having an impact on the final result, and it is bewildering until you understand a few basics.

Long held as the defacto way to explain exposure, the triangle is simply a graphic showing how aperture, shutter speed and ISO work together. They are so closely linked that one affects the other, all to achieve exactly the same result, a GOOD EXPOSURE. Take a look at the diagram and see how shutter speed, aperture and ISO are all closely linked with each other.

→ **TIP** Turn your camera on, put it in 'A' and have a play. Alter the aperture and watch how the shutter speed changes to achieve exactly the same exposure. The Exposure Graph on the bottom screen will stay at '0'. Try in S, set the shutter speed and watch how aperture changes. Now try in M, alter the shutter speed and the aperture to keep the indicator on '0'. All of these changes give the same exposure and yet alter the sharpness, the depth of field or the amount of grain in the image. It is these factors that need to be considered when setting the exposure.



Light is how much light enters the camera, which can be confusing. Less light for a longer shutter speed means blurred movement. Less light for a shorter shutter speed and higher ISO means more grain. More light with a wider aperture means less depth of field.

Aperture not only affects how much light enters the lens by the size of the aperture (f-stop), but also depth of field. You may want a wide aperture to throw the background out of focus, or a narrow one for sharpness front to back, or to slow the shutter for blur. Usually in Landscape photography we are more concerned with depth of field so a narrow aperture is used

ISO changes the sensitivity of the sensor to light. Higher ISO reduces shutter speed and produces more noise, but making it more complicated, so can a poorly exposed image. Lower ISO gives longer shutter speeds. A badly under-exposed image will be 'noisier' when corrected in post because the information was not captured, known as the Signal To Noise Ratio. SNR is a scientific concept we need not get too deep into, suffice to say a low ratio (poor exposure) is less desirable than a high ratio. Long exposures produce more noise because of sensor heat.

Shutter Speed is exactly as it says, the speed at which the image is taken. A fast shutter speed may be needed if there is action in the scene you want to freeze, or a slow shutter if you want to blur movement, such as water.

The reason we refer to an *Exposure Triangle* is because when you alter one setting, it affects one or more of the other two in a constant triangle. You may set ISO first if light is low and you need a fast shutter, also altering the aperture to increase shutter speed, or set the aperture (A Mode), or the shutter first (S Mode). Doubling the ISO shortens shutter speed by half, or close the aperture a full stop (f5.6-f8) reduces light by half so the shutter speed (length) will double. Remember wider is a smaller number, slower is a larger number.

Examples:

1- f8 ISO200 s. speed 1/20

2- f11 ISO200 s. speed 1/10 (Aperture twice as narrow, shutter 1/2 speed).

3- f11 ISO400 s.speed 1/20 (ISO double, shutter back to 1/20)

4- f5.6 ISO400 s. speed 1/80 (Aperture 2 stops wider, shutter doubles twice)

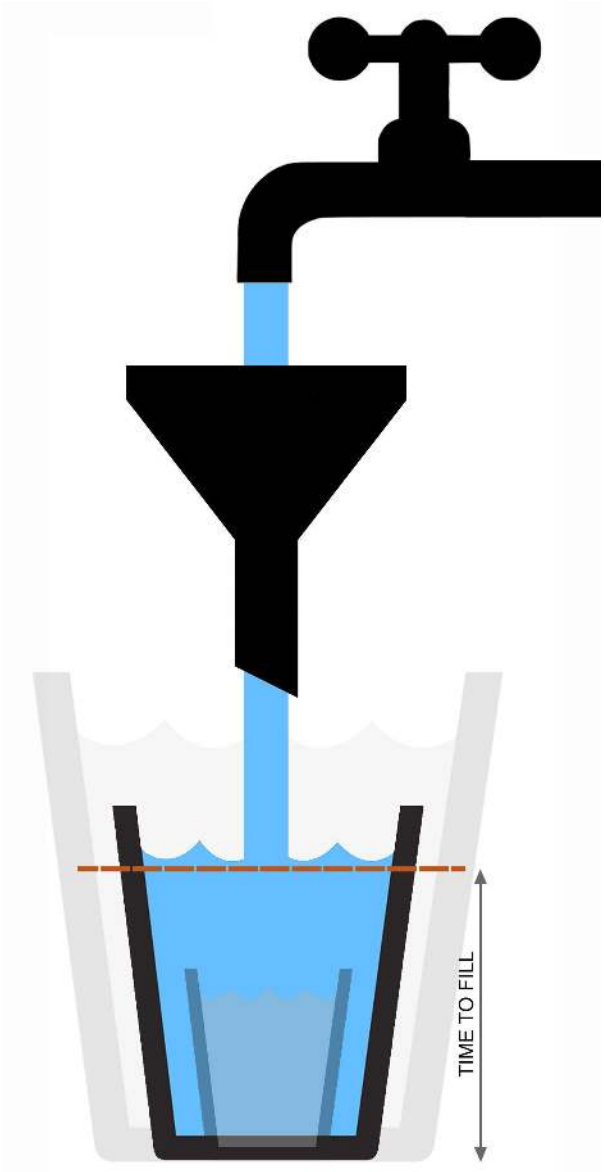
All of these example result in the same thing, a good exposure. But altering one affects the other, and when you understand each side of the triangle you will be able to put the three together more successfully.

THE MAGIC BUCKET

As you can see the amount of light to get a good exposure depends on many variables, ambient light which is out of your control, and the camera settings which you do control. Setting one of the three variables will always affect one or two of the other settings in a triangular way. Understanding how changing the variables and what the impact is on your image is the key to your creative decisions. Change the aperture by a full stop and the shutter speed will change by half the speed because you let twice the light in, but both are the same exposure. Double the ISO and the shutter speed will change by half. In Manual if you set Auto ISO, then set the shutter speed and the aperture, the ISO will change accordingly. Let's have a look at a visual way to explain it using my Magic Bucket analogy with water filling a bucket to represent light.

EXPOSURE Imagine a bucket full of water, with a line denoting full. A full bucket represents a correctly exposed image. Half full and it is under-exposed resulting in noise when you try to save it in post. Overflowing and it is over-exposed, your highlights are gone and you need a mop.

LIGHT Light is the water flowing from the tap, it fills the bucket, or fills your sensor with exposure information. The flow of water or ambient light in the scene is controlled by the tap, in full flow on a bright sunny day or just a trickle on a dull day. In the UK it's usually a trickle. You cannot touch the tap or alter the amount of ambient light.



SHUTTER SPEED Shutter speed is how fast the water passthrough the funnel . Will it fill quickly or slowly? The aperture and ISO you choose will influence it.

ISO changes the sensor sensitivity to light. Increase or decrease ISO and the sensor is more or less sensitive. Double the ISO and the bucket shrinks by half because it needs less to be full. Half the ISO and the bucket size doubles because it needs twice the water to fill it.

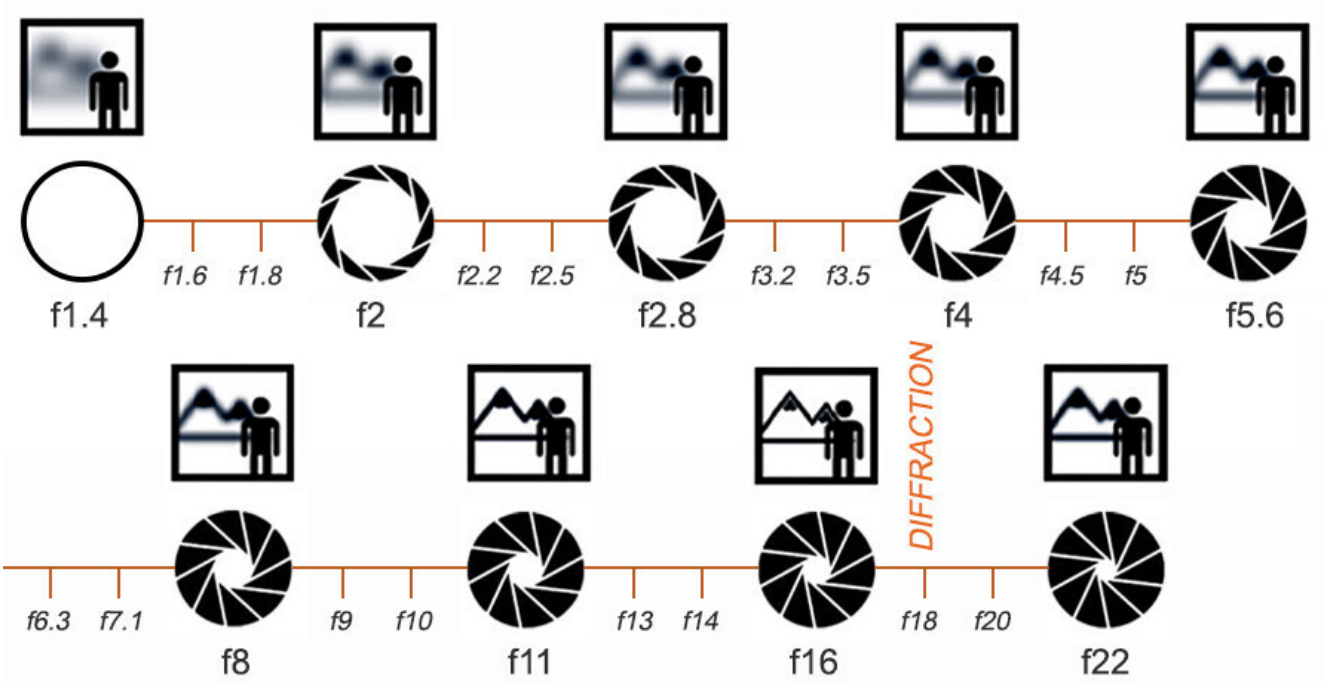
Taking this one step further imagine the bucket is 1 gallon ISO 200 and needs to be full to the top for a good exposure, or a good Signal to Noise Ratio. Lower the ISO to 100 and the bucket gets twice the size because the sensitivity of the ISO to light has halved and it needs more to fill it. Double the ISO to 400 and the bucket gets half the size because sensor is now twice as sensitive and needs less to fill it (it is a Magic Bucket remember). Altering the size of the funnel alters the speed of the water flowing though it to fill the bucket. You cannot alter the tap, that would be like turning the sun up or down.

The decisions you make regarding the size of the bucket (ISO) the size of the funnel (Aperture) and the speed of the water flowing through the funnel (Shutter Speed) should all achieve the same thing, filling the bucket. But these decisions affect the visual appearance of the image, and that is where your creative control comes in.

APERTURE

For Landscape Photography the Aperture is our primary concern. It dictates how much Depth of Field we have in an image and we will look at this in more detail in the next section. For now we need to address a term you probably hear, '*stops*'.

Lenses are often quoted as being a full-stop faster than another, or 'change exposure by a full-stop'. Apertures are expressed as f-numbers and there is a scale of what denotes a 'full' stop. But all cameras also have additional f-numbers, you can actually set whether to have 1/3rd or 1/2 stops, 1/3rd being the most useful.



DIFFRACTION Don't get overly concerned with which apertures will give the best depth of field from the diagram, it is a generic theory. The size of the sensor also affects depth of field just to make things more complicated, with smaller sensors having a greater amount. For a full frame sensor the most practical f-number is usually around f11-14, for an APSC camera it is less, around f9-f11, and for Olympus Micro 4/3 even less at anything from f5.6-f7.1. So Olympus Micro 4/3 actually has a greater depth of field than a full frame sensor which is great for Landscapes, not so great for photographers who want the maximum background blur or bokeh such as in portraits. But it doesn't account for Diffraction which makes lenses softer the more they are 'stopped down' ie, a smaller aperture used like f22

Diffraction is not a defined aperture, different lenses will have a different point when it becomes apparent and it is important you know your lenses. When diffraction affects the image it starts to get softer meaning your best efforts to get the maximum depth of field are defeated, instead of the background being sharp it starts to look soft again. This is why we always try to use the best aperture for the maximum depth of field and sharpness and avoid diffraction. The focal length of the lens also affects it with wide lenses having more depth of field and longer lenses having a shallow depth of field. If this is making your head hurt don't worry, we all had to start at the beginning and it confused us all. See the next section "Depth Of Field" where we will look at this in more detail and discover how to approach it.

DOUBLE OR HALF?

f1.4	f1.6	f1.8	f2	f2.2	f2.5	f2.8	f3.2	f3.5	f4	f4.5	f5	f5.6	f6.3	f7.1	f8	f9	f10	f11	f13	f14	f16	f18	f20	f22
LOW*	80*	100*	200	250	320	400	500	640	800	1000	1250	1600	2000	2500	3200	4000	5000	6400	8000	10000	12800	16000	20000	25600
60"	50"	40"	30"	25"	20"	15"	13"	10"	8"	6"	5"	4"	3.2"	2.5"	2"	1.6"	1.3"	1"	1.3	1.6	1/2	1/25	1/3	1/4
	1/5	1/8	1/10	1/13	1/15	1/20	1/30	1/40	1/60	1/80	1/100	1/125	1/160	1/200	1/250	1/320	1/400	1/500	1/640	1/800	1/1000	1/1250	1/6000	1/2000

The table above shows how aperture ISO and Shutter Speeds double or half and have 1/3rds in between. It is not representative of an exposure guide, it is simply to represent how the numbers change.

It is important to understand how changing the aperture affects exposure, and for that matter ISO and Shutter Speed. Changing the aperture from for example f2 to f2.8 is one full stop. The amount of light entering the lens has been halved, so the shutter speed, or the time the shutter is open, will double. The exposure is the same, half the light entered the lens but for double the time so the total amount of light the sensor receives is the same. Changing from f2 when the shutter speed is 1/100th second, to f2.8 (half the light) means the shutter would be 1/50th second. The ability to vary settings and have the same exposure gives us control over how the final image looks in terms of movement being captured sharp or soft, and the sharpness or lack of it in the background.

Remember that the higher the number, the faster the shutter speed is, and the higher the f-number the narrower the opening, so the less light enters into the lens. 1/50th is half as fast as 1/100th. It doubles exponentially too, so 2 becomes 4, 8, 16, 32, 64, 128 etc. Shutter speeds and ISO do not follow this exactly and will be rounded up or down to a convention that has become standard.

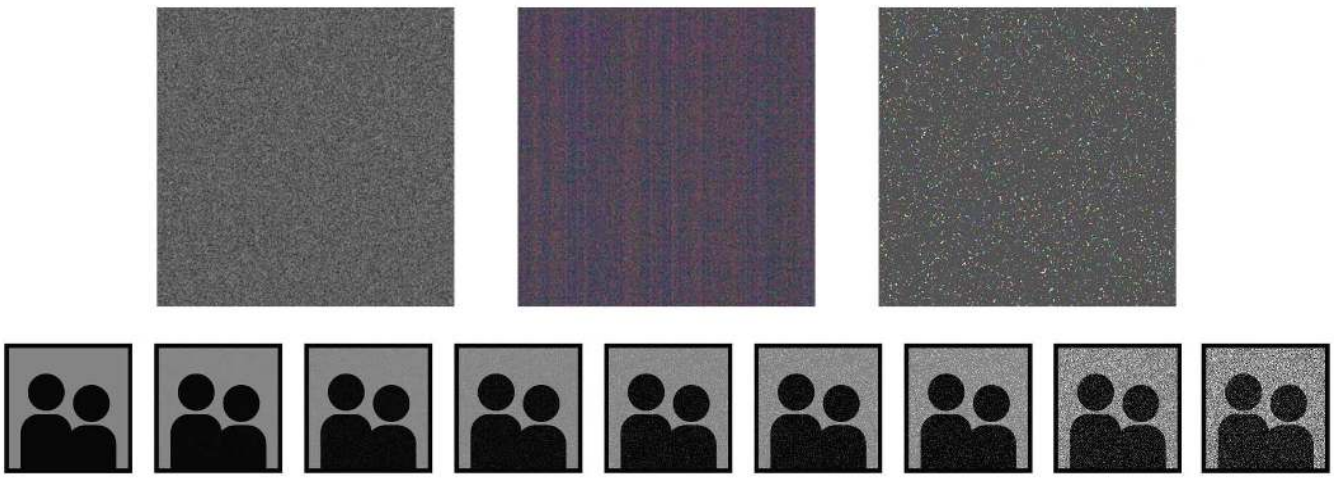
Notice how aperture increases or decreases in steps of three with 'full stops' indicated in black. Whichever f-stop you use, the next full stop is the third one along. The same is true for ISO and shutter speeds. When selecting a setting, just remember that each 3rd one equals a full stop, so it will equate to double, or half the previous setting. All you need to take away from this is that Aperture, ISO and Shutter Speeds all have main 'stops' with 1/3rd increments between each one. Each full 'stop' equates to double or half, just as the Aperture doubles the amount of light that passes through the lens, or halves it, ISO doubles or halves the sensitivity to light. Shutter speed will be double the length, or half.

Note that the differences are exponential. Take a shutter speed of 1 second. Reduce the Aperture by 3 stops to slow the shutter speed down and the math does not equal 1'' x 3 = 3''. If only it were that easy. 1 second reduced by 3 stops becomes 8 seconds because they are exponential, 1, 2, 4, 8. It is easy enough to remember the principle, but don't worry about the steps in between, the camera will do it for you.

→ **TIP** LOW* 80* 100*. Highlighted because these are computational low ISO on Olympus and vary by model. Anything under 200 is computational and has reduced dynamic range. Whilst they are acceptable to use when needed be aware that the DR can result in less latitude for highlights and shadows

ISO AND NOISE

There will be times when the only option you have to achieve the result you want is to alter ISO. ISO affects the sensor sensitivity to light; increasing it means it needs less light and vice versa. Therefore you can reduce the shutter speed when needed by increasing ISO, and also, if you have the depth of field, by altering the aperture. The consequence is increased noise which is one thing I do my best to avoid (see Workflow for how I do this). Reducing ISO to the Low settings can reduce Dynamic Range, so again you have decisions to make.



There are three types of noise; Random Noise, Banding and Fixed pattern Noise:

1- Random Noise – What we will see more often when using high ISO settings. The OM-1 has a new Jpeg engine which vastly reduces noise using the Noise Filter giving very good results but it is only Jpeg and does not affect Raw. For Raw images it is necessary to deal with it in post so keeping it to a minimum is best. It is referred to as random because the pattern changes from image to image even with the same exposure.

2- Banding Noise – Different cameras can be more or less susceptible to banding, mostly seen in shadows and due to poor exposures. Olympus do suffer from banding so again it is important to get exposure right and not open shadows too much.

3- Fixed Pattern Noise – Fixed Pattern, also called 'Hot Pixel Noise' is so called because it is generally a fixed pattern and mostly caused by very long exposures. Noise Reduction does help to minimise it even for Raw images, although sometimes it can be best to switch it off to save the time of the camera taking another dark frame of the same exposure time. There are ways to deal with it when processing although leaving it on does help. Heat is a major contributor, the harder the sensor is working during long exposure the more noise and 'hot pixels' will be generated.

High noise levels in an image gives more 'grain' and less detail so it is always best to use as low an ISO as you possibly can. Cameras these days including the OM-1 can deal with high ISO very well in good light because the shutter speed will be high and the sensor will not heat up. For wildlife shots using a higher ISO is never generally as much of an issue as in Landscape photography because we will usually use much longer shutter speeds.

SHUTTER SPEED

Shutter Speed determines how movement in the image is captured, whether frozen or blurred. For Landscape Photography is is not often we want to freeze movement. Perhaps there is some tall grass blowing in the wind, or a waterfall you want to shoot with sharp water detail. Generally movement is not such an issue and all we have to consider is being able to hand hold a camera or use a sturdy tripod.

A fast shutter speed will freeze movement whereas a slow shutter will blur it, and there is no fixed shutter speed, it obviously depends on the motion.

The only time fast shutter speeds are really necessary is for action, wildlife, sports, bird photography etc. In Landscape Photography we still consider shutter speeds usually to soften motion such as water.

Experience will teach you the best settings to use, for instance with fast flowing water in a waterfall I like to keep the shutter speed to around 1/4 or 1/2 second, no more or less. Misty waves lapping over rocks could be many seconds, whilst streaking clouds moving over the sky could be minutes. We will look at this in detail in 'Techniques'

EXAMPLES

Both of these images have a common characteristic in that they need maximum depth of field so the foreground and the background is sharp, but both used different shutter speeds to convey movement a different way. Once you master the technique you then have the ability to make creative decisions about how you want the final image to look.

Olympus E-M1 MkIII 12-100 Pro @12mm ISO 200, f7.1 1/2s Exp

Olympus OM-1, 8-25mm Pro @8mm ISO 200, f8 30s Exp LiveND64 (6 Stop)

CORRECT METERING

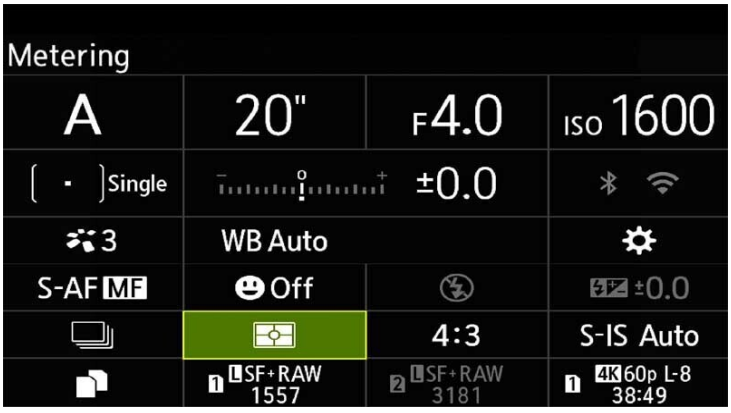
HOW TO METER FOR CORRECT EXPOSURE

Metering is fairly straight forward with digital cameras these days having built in light metres with different modes, but it wasn't always that way. Back in the day before internal meters we had to use an external hand help meter. Imagine that.

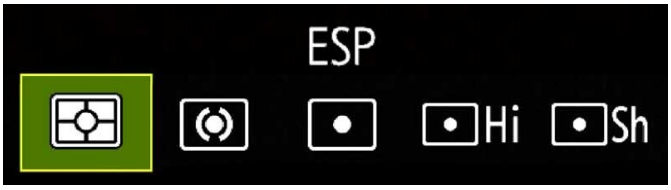
I tend to use Evaluative Metering for almost everything. Spot metering is useful when a subject in the scene has priority such as wildlife, and I set my Custom Modes accordingly. It's useful to understand the different metering modes, what they are for and how to use other information such as Histograms

UNDERSTANDING METERING MODES

All modern cameras have metering modes built in and they are based on three main modes with different brands giving them different names. With Olympus we have *ESP (Electro Selective Pattern), Spot Metering and Centre Weighted.*



There are two other Spot Modes, *Spot Hightlight and Spot Shadow* which give priority to shadow or highlight as named. Access the modes through the Super Control Panel or the Menu *Camera1>5>Metering.*



ESP takes light readings from the centre and surrounding areas and tries to calculate an average reading of the light to determine the best exposure.
Spot takes a reading from a small spot in the centre and calculated exposure based on the light in that area.
Centre Weighted reads a larger area of the scene with bias towards the centre, exactly as the name suggests.

The camera has a standard it compares light to when evaluating the light which is 18% grey (50% grey on your monitor). If the majority of pixels are brighter that this 18% grey it will reduce the exposure, or darker and it will increase the exposure.

→ TIP The camera is not intelligent and has no idea what a scene is. Ever taken a picture of bright snow which turns our a horrible grey? As far as the camera is concern it is just bright light which is brighter than the 18% grey benchmark, so it reduces the exposure. It thinks it is being over-exposed and has no idea it is snow and should be bright. In these situations you need to override the exposure to brighten it. This image was very under exposed. I brightened it by using exposure compensation being careful not to blow out any tones.

WHICH METERING MODE TO USE

The truth is there is no right or wrong. ESP which I use most of the time will read more of the scene and give an average of the readings. Spot as we know will read just a small portion. Each has advantages and disadvantages, for instance when using ESP you may have a main subject which is back illuminated and greatly under-exposed.

This is particularly true for Wildlife photography and Portraiture when Spot would be more accurate. Spot metering and Centre Weighted may fall on a particularly bright or dark part of the scene which would adversely affect the whole image too much.

ESP metered this bright scene at 1/800s @f6.3, reading all of the screen and making a comparison to the 18% grey correct exposure.

Spot metering just from the centre which was much brighter. The camera has under exposed the whole scene. Notice how the Histogram has also moved further into the dark tones.

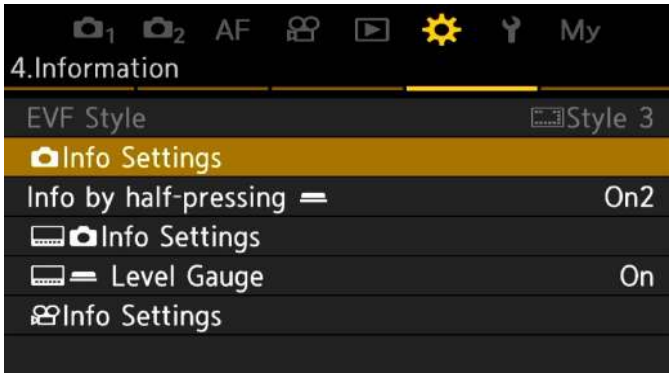
TAKING CONTROL OF EXPOSURE

We can use the camera to give us a guide for the correct exposure. Remember it bases the suggested exposure on a pre-define 18% grey point (as a zero). It can easily be fooled into under or over exposing based on the scene which means we have to make judgements ourselves. To do this the absolute best indication is the Histogram. Getting familiar with it will serve you well.

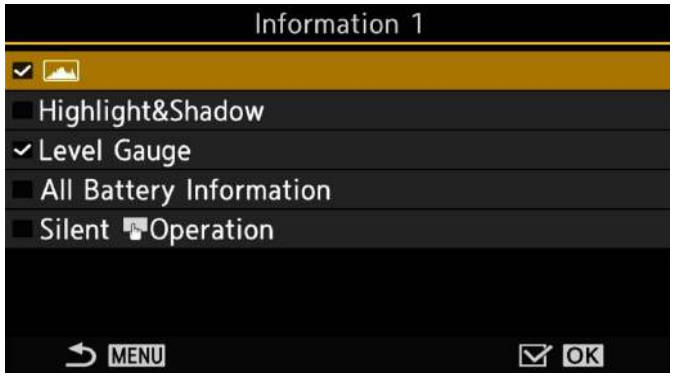
LIVE HISTOGRAM

The Live Histogram gives us a real time representation of the light in the scene and allows decisions to be made based on it. It can be enabled in the menu for the rear screen, the EVF, or both and I would set it for both. You can also view the Histogram when previewing an image by pressing *Info*.

Cog menu >4.Information>Info Settings



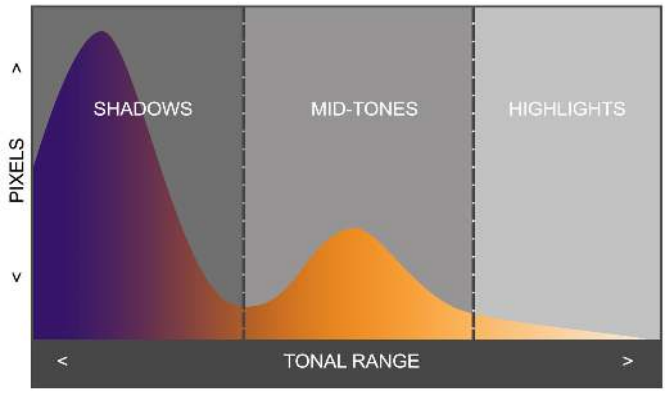
Select settings to set up. You have the options of setting up the rear screen (Camera Icon) and EVF (Screen/Camara Icon) individually. I suggest keeping them the same.



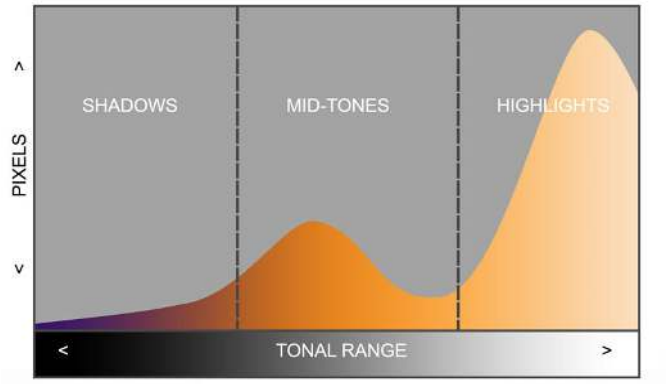
Entering each one you have 3 sets of settings to enable, Information 1, 2 and 3. Select the settings you would like to see each time Info is pressed. Set Histogram in Info1

WHAT IS THE HISTOGRAM SHOWING?

The Histogram shows the levels of brightness in a scene, with dark on the left (pure black on the left edge), midtones in the middle and bright on the right (pure white on the right edge). The height, or the vertical axis, shows how many pixels of each brightness are in the image. You may also see colours too, with Green representing the pixels within the Spot metering range even if you are not using it, Red representing areas above the upper limit and Blue representing areas below the lower limit.



Histogram with mostly dark tones – Signifies underexposure.



Histogram with mostly bright tones – Signifies overexposure.

READING THE HISTOGRAM

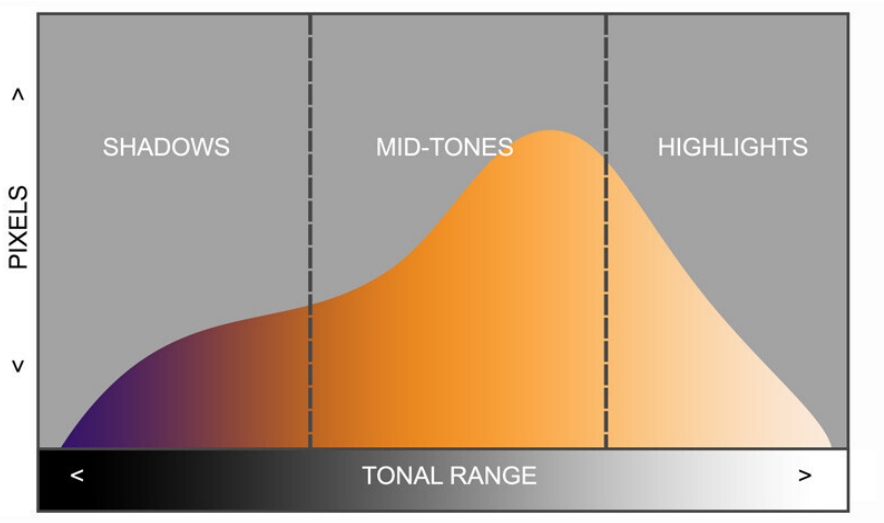
These simplified graphics representing a histogram show the tones in the first example have dark tones all bunched to the right, and the opposite on the second example. This means they are under or overexposed just taking the information as it is. Or does it? It needs to be read in context with the scene, a bright scene may have the tones largely in the bright tonal range and a dark scene may have the tones in the darks.

Although we do not know what the scene was the tones in both have been 'clipped'. The first example has the darks going way off the scale so they are pure black and shadows will not have any information other than just black, they will be impossible to open to recover any detail because it isn't there.

The second has highlights way out of the scale meaning the highlights have been blown and again there will be no information other than pure white. Highlights will be impossible to recover.

Also in some cases you may find the graph goes out of the top, again meaning the tones have been clipped. You will soon find it easy to read a histogram and it may have lots of 'spikes'. That is normal, a light or dark point in a scene will produce a spike and you will be able to identify what actually created it. Reading a histogram can actually provide a great deal of information.

CORRECT HISTOGRAM



If you got ahead and thought the histogram needs to be in the middle you are correct. All the light in the scene is contained within the tonal range of the histogram which means all of the information has been captured and you have a much better chance of being able to process a good image. Notice also that it is within both edges; the tones have been kept away from pure black and pure white. A histogram resembling this is your best exposure. It may have many peaks and troughs, it doesn't matter, as long as you can keep it within the range.

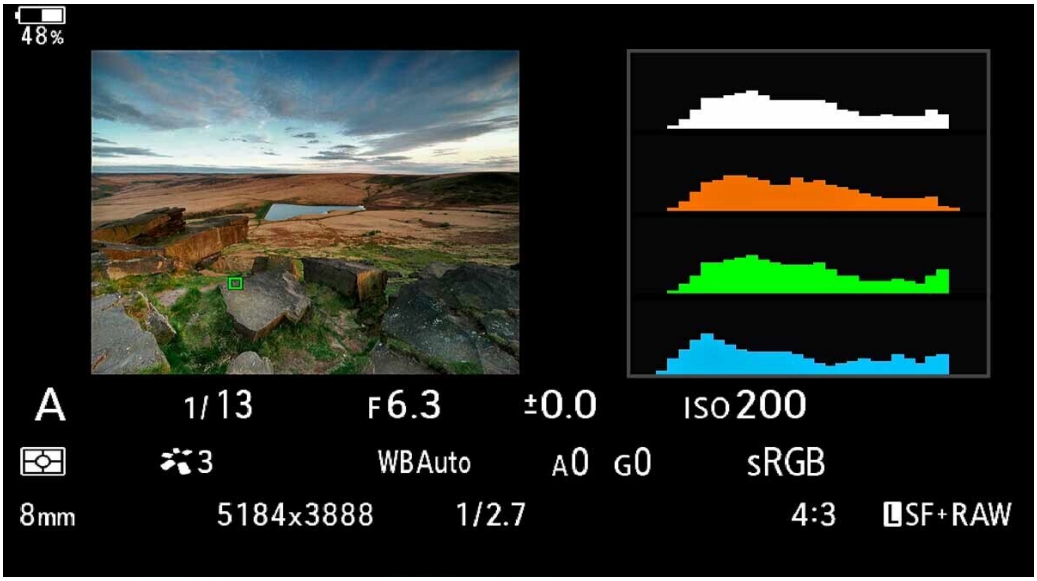
EXPOSURE COMPENSATION

We have seen that the camera will meter an average exposure so how do we override it to set our own exposure? There are different techniques for doing this depending on the shooting mode you use. In Aperture Priority we use Exposure Compensation. In Manual we alter the shutter speed (not aperture because that controls our DoF) to move exposure up or down. In Shutter Priority we alter the aperture but that is less relevant for Landscapes.

In 'A Mode' take a meter reading, see what the Histogram is telling you and take a test shot. Then simply turn the front dial and alter the exposure to whatever you feel the situation requires. You will see the pointer on the exposure graph at the bottom move up or down away from '0' and also see the histogram change accordingly. It really is that simple. By doing this you are taking control of the exposure armed with the information given by the Histogram. If you feel highlights are blowing or shadows are too dark the Histogram will indicate this and you can adjust to suit. It actually means that whichever Metering Mode you use is somewhat moot too because your'e overriding it and making decisions yourself.

The scene here has a good exposure with no blown highlight. The Histogram shows bright tones are well controlled because I had a graduated filter in place. There are plenty of darks because of the shadows but they are away from the left edge so shadows are not blocked in. I could have moved exposure up a little to the right although all the tones are spread out evenly, all the information is there and nothing is clipped

Dialling in 1 stop under exposure (Note they are in 1/3rd increments). This is obviously too dark and the Histogram is telling us the same thing. Darks are not yet clipped to 100% black but they are too dark, mid tones are reduced and there are no bright tones at all. This would result in more noise, the first image will give a much better quality final image.



The image Playback Histogram gives the same information with luminance well within what I would want as a good exposure. Here it gives all four channels, including red, green and blue. Being able to see all channels is useful because one may be slightly blown allowing you to make changes.

EXPOSE TO THE RIGHT

→**TIP** – Expose To The Right (ETTR) is a technique you may hear and it is important when using Olympus. ETTR means pushing the exposure a little into the upper mid tones and highlights but without clipping or blowing highlights. This is because the more information you can gather in an exposure the better and the less your shadows are 'blocked in' the better. It is easier to reduce exposure when processing than it is to increase exposure because of noise. We looked at noise previously and we know we want to avoid it. Do note however that it is scene dependent and you may not need to push exposure to the right. What is important is not under-exposing. Another factor that is important is the Signal To Noise Ratio and it plays a large roll in why we expose to the right.

SIGNAL TO NOISE RATIO (SNR)

Without getting too technical Signal To Noise is a scientific way of expressing signal to noise for electronic devices including cameras. A high signal means the information stands out from the noise, where a low signal means it is less distinguishable from noise.

As the 'information' is light the more we can gather the less chance there is of noise dominating the image. There is always noise, how we control it is by giving more signal so it cannot rear its ugly head. An under exposed image will have much more noise, and trying to brighten it in post just amplifies the poor signal you captured. Shifting the exposure over to the right will result in less noise. Do remember though sometimes it is unavoidable, in long exposures for example we also have sensor heat noise, but the more you do to reduce it with good technique the better.

Smaller sensors with lots of pixels generate more noise than a larger sensor with less pixels because the pixels (or photodiodes) are larger and can gather more light. The Signal To Noise Ratio will be higher. Olympus sensors are small so they are inherently prone to more noise so it follows that increasing signal for a better exposure reduces this.

This is one reason Olympus have not exceeded 20mp and unless they find a way to increase it without increasing noise I am fine with that. You may have seen some Full Frame cameras with large pixel counts (46mp) and the same body being available with much lower pixels (12mp). They are designed for genres such as Astro Photography where the ability to capture more light with less noise is more important than high pixel resolution.

AEL – AUTO EXPOSURE LOCK

Another method is using the Auto Exposure Lock and it is worth mentioning how it works. You can influence the areas the camera meters from by adjusting the framing, if you feel the ground is a little dark a bright sky may be the cause. By adjusting the camera down a little the meter reading will change which you can then lock using the AEL button. It means altering composition and with the flexibility of just using Exposure Compensation AEL is a function that is seldom used. If you follow the settings guide you have already set it to a more useful function.

SHADOWS AND HIGHLIGHTS

Another additional visual aid is the Shadows and Highlights which is also available to enable in the *Cog Menu >4. Information.*

It provides a visual warning when highlights will be blown (orange) and when shadows will be blocked in (blue). It is also available in image playback. I find it a little intrusive to have enabled shooting live even if it can be set on a different screen by pressing Info. I find that the Histogram is enough. One thing to note which comes from experience and knowing your sensor, the warnings can be a little conservative and err on the side of caution. If a very minor highlight warning shows it is probably fine and can be recovered in post.

A TRICKY EXPOSURE

8-25 Pro @ 8mm ISO200 f7.1 1/13s Exp.

Facing directly towards the sun is always going to be a challenge. It is always better to wait until it is at the least intense when right on the horizon, but even so it will still be a challenge. For this image I used a Reverse Graduated ND Filter to bring down the intensity of the sky and sun. Using a grad filter has the advantage of being like sunglasses, it takes away the dazzle and makes the ground more visible. Go outside with a bright sky, shield the sky with a hand and see how much clearer the ground is. Doing this brightened the foreground which was so underexposed. Now the Dynamic range was closer to what I could capture I had the latitude to actually increase the exposure by a full stop and open the foreground more to stop the shadows blocking in completely. The trick is to always find the balance and to know just how far you can push or pull the RAW images in processing.

DEPTH OF FIELD

MAXIMISING DEPTH IN LANDSCAPE PHOTOGRAPHY

Depth Of Field simply means having your image in focus front to back, from the foreground interest all the way to the background. This section deals with the theory and the technique to maximise it.

The theory behind Depth of Field is simple enough to understand but achieving it is somewhat harder until you understand what it is, what actually impacts it, and how to put it into practice. The Aperture you select will determine how much Depth of Field (DoF) you have, as will your camera sensor and the field of view of your lens. As we saw in the last section, our Olympus Micro 4/3 sensors have more Depth Of Field than an APCS or Full Frame sensor, although we still have to consider the Aperture, and we have to be aware of Diffraction.

UNDERSTANDING DOF

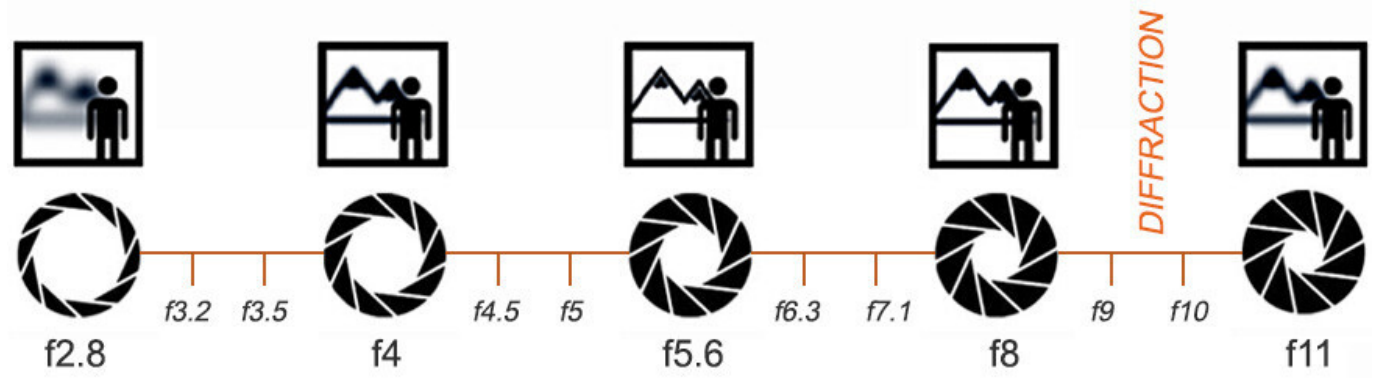
Depth of Field dictates that wherever you focus there will be an amount that will be in focus from the focus point towards infinity and also an amount from the focus point towards you, but to a lesser extent. It varies by lens field of view, with long lenses having much less than wide lenses.

The technique to maximising Depth of Field is by understanding Aperture, Hyperfocal Distance, and Diffraction. Hyperfocal Distance allows us to focus further into a scene than the foreground interest we need to be sharp

→ **TIP** Try this exercise in your garden or somewhere where you can get some distance. Use a wide lens and a telephoto lens, shooting various scenes and various apertures. Have a main object of interest, a pot plant, garden chair, street light etc, and vary your distance from it. Using different apertures check how the background sharpness looks. You will see how the background looks sharper and softer. You can use the Depth Of Field Preview and also use Peaking if you set the camera up as in the previous sections. Peaking is not entirely accurate for DoF but it gives a general idea.

APERTURE

The diagram below shows how as the aperture gets smaller DoF increases. It is a generic visualisation so don't take it literally, different lenses perform differently. An ultra wide lens such as the 7-14 or 8-25 has inherently greater DoF and I will normally shoot at between f5.6 to f7.1 knowing I have DoF extending all the way to infinity, depending where I focus of course. A longer lens such as the 40-150mm has much narrower DoF making it ideal when subject and background separation is desired. For landscape work using longer lenses means Focus Stacking may need to be used because of the shallow DoF. The Aperture you choose will influence the DoF, and as we saw in the Exposure Triangle the shutter speed.

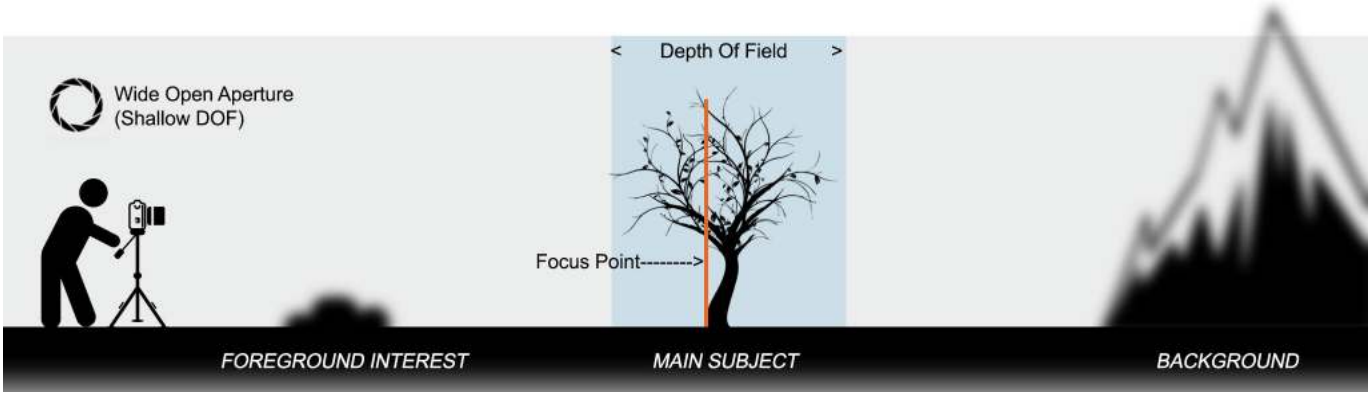


Confusingly it is different for Full Frame, APSC and Micro 4/3 sensors. Smaller sensors have greater DoF and M4/3 has approx double that of a Full Frame camera, great for us landscapers. At around f5.6-f7.1 with a wide angle lens we would have great DoF as shown, but a Full Frame would look similar to as shown at f11. Full Frame cameras need around double the f-stop and an APSC around x 1.5, so if you use other systems it is something to consider carefully. Using a Full Frame I would tend to shoot at around f13-f16, around double that of M4/3.

There is a point when Diffraction affects all lenses. Diffraction is simply when an Aperture is so small the light entering it has to pass on an angle to cover the sensor resulting in a softer image. The consequence is it prevents us from running around just using f22-f32 all day; the gains in DoF are eliminated and more to the point reduced by diffraction. Most lenses have a 'sweet-spot', the point at where it is at its sharpest and is usually a 'stop' down from wide open. When considering DoF also consider at what aperture is the lens sharpest, what loss if any is there to maximise the DoF, and where does diffraction start to have a negative effect.

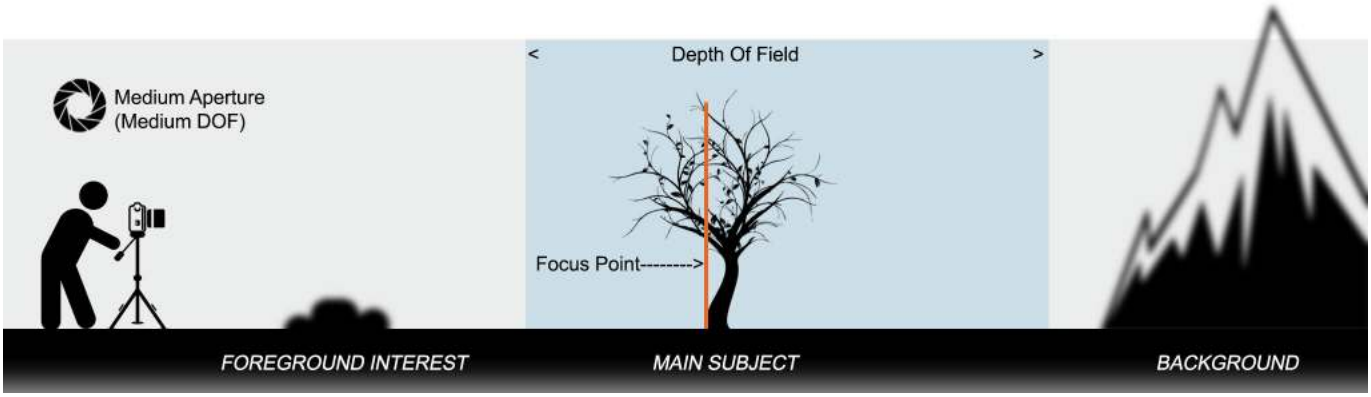
DEPTH OF FIELD

The diagrams below show the Depth Of Field theory. We have you the photographer with your very round floating head, and a Landscape scene with a Main Subject, a trusty Lone Tree (everyone loves a Lone Tree), the Background, and Foreground Interest. In this example to show the theory with more clarity the main subject or object of interest is shown in the mid-ground. We will always have '*zones', foreground, mid-ground and background*, and your main subject of interest, or the area you want the viewer to be drawn to first may be the in the foreground or the mid-ground. We will look at Composition in another section.



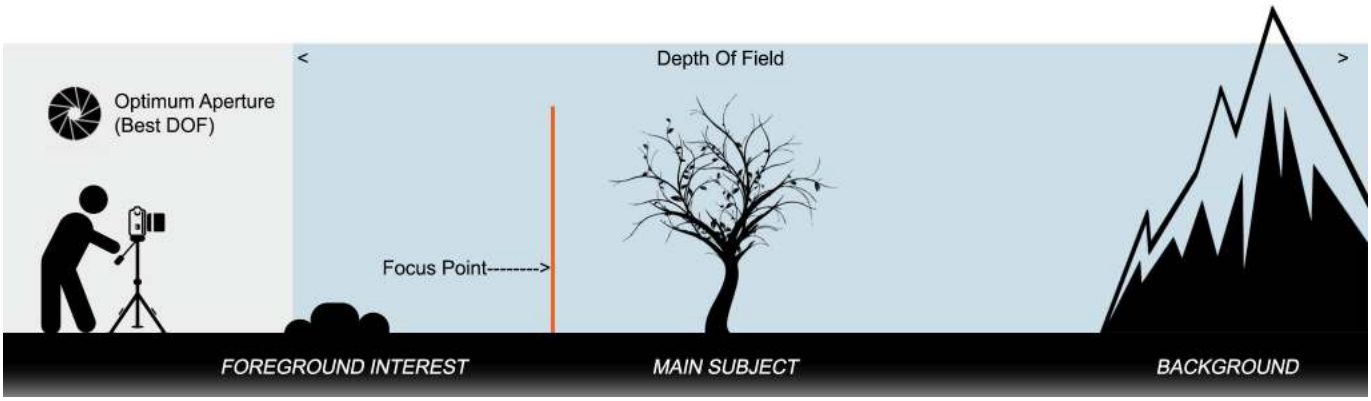
WIDE APERTURE

The Main Subject is used as the focus point with little consideration to Hyperfocal Distances, and with a wide aperture set. As you can see the tree will be in focus but the background and the rocks in the foreground are out of focus. They are rocks, trust me. The actual DoF shown for the tree depends on your distance from it, and the lens used. A wide lens (7-14mm, 8-25mm) which has inherently large DoF would have enough to render the tree and background in focus but may not extend towards the foreground, whereas a longer focal length would probably not extend even to the background. Get to within a few meters of the tree and the DoF would change, there would not be enough even for just the tree front to back.



MEDIUM APERTURE

The same scene with the aperture closed down a little more. The actual f-number isn't specific because we will look in more detail at this. We haven't changed the focus point, and the DoF has increased. The foreground and background are still out of focus although the background is somewhat sharper, so further changes are needed. Remember distance from the main subject also affects the DoF.



OPTIMUM APERTURE

We have closed the aperture down more to the optimum f-stop which depends on the lens being used. We now have enough DoF to get the whole scene from the foreground to the background in focus.

Two things to note here, I say 'in-focus' and avoid the term sharp because this depends on a number of factors, the quality of the lens glass and diffraction. The focus point has been placed further forwards to increase DoF, instead of focusing on the main subject we focus before it which increases DoF to include the foreground. There are situations when to extend DoF it is best to focus in front of your main subject. When considering foregrounds it's also acceptable to decide what needs to be sharp and focus a little behind this instead of the main subject.

REAL WORLD EXAMPLE

Let's look at a real world example and see exactly how Depth of Field changes depending on lens and aperture. The table below is generated using *PhotoPills DoF Table*, an app I recommend and more on that below. Enter the camera (there is no OM-1 as yet so use EM1-MKIII) focal length, then simply tap on the grid where the subject distance and aperture align. Tapping 'Visual' will reveal the visual aid as shown.

As said before using wide angle lenses gives greater depth of field, and even more so with M4/3. The Table shows how with a subject distance of 5m and using the 8-25mm lens the closest focus towards us is 0.88m extending to infinity. Remember this is focusing on our subject 5m away, so the area of what will be in focus extends significantly in front of the focus point (we can capitalise on this using Hyperfocal focus points).

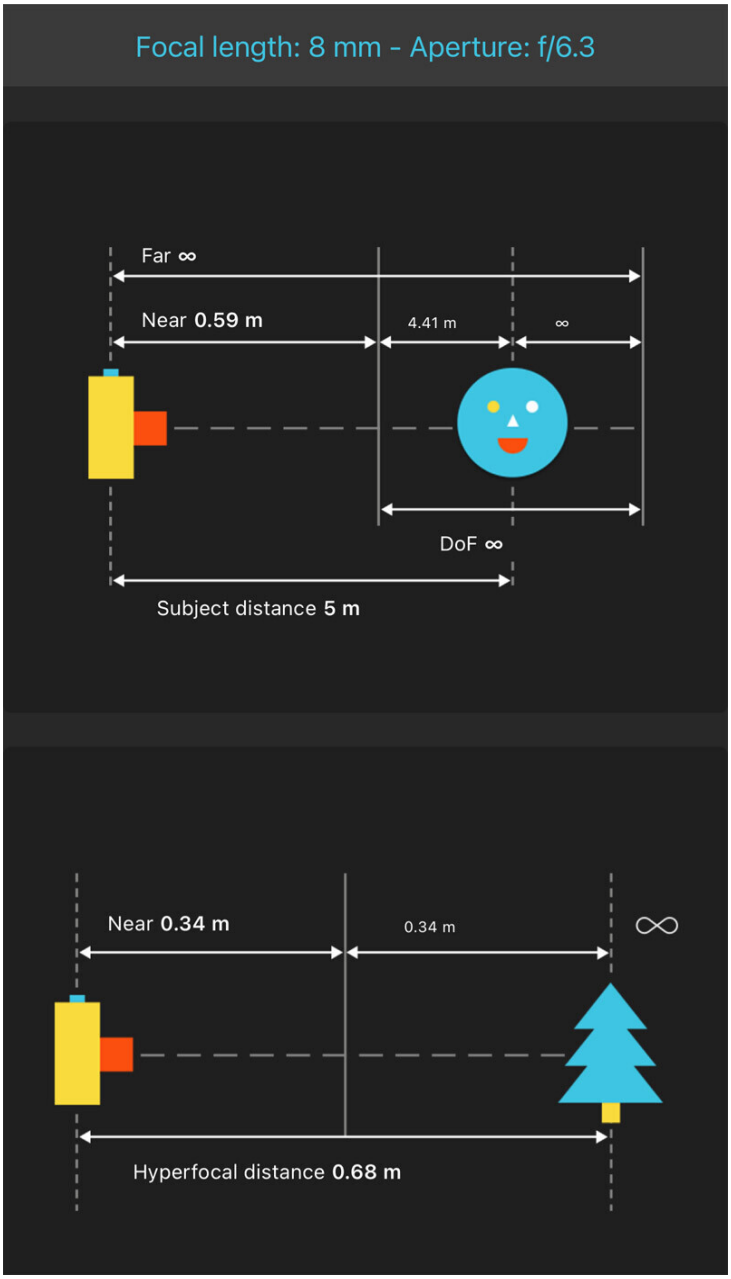
At 12mm the closest focus is 1.62m, extending as the aperture is closed down, and using a long lens like the 40-150mm at 40mm the closest focus is 4.21m. DoF is less than 2m which highlights how much awareness needs to be given to the focal length of the lens used, the aperture, and where you focus.

Focal length	Aperture	Near Focus	Far Focus
8mm	f4	0.88m	Infinity
	f6.3	0.59m	Infinity
12mm	f4	1.62m	Infinity
	f6.3	1.16m	Infinity
40mm	f4	4.21m	6.15m
	f6.3	3.86m	7.11m

SUBJECT DISTANCE 5m

The screen shot of PhotoPills shows the DoF using the 8-25mm at 8mm. It shows the Subject Distance, Near and Far Focus, or what would be acceptably sharp. Notice underneath there is another visual 'Hyperfocal Distance'.

As shown on the '*Optimum Aperture*' Visual we can move our focus point forwards instead of on the main subject. PhotoPills has suggested here instead of focusing on the main subject 5m away if we focus on the Hyperfocal 0.68m away the near focus or what will be sharp will be brought closer to us to 0.34m. That's a big difference!



1/3 IN METHOD

If this sounds like it is all getting complicated don't worry. Before we look at Hyperfocal Distances there is another way that is tried and tested before the days of Apps, using the '1/3rd In Rule'. As it suggests you are deciding on a point in your scene which you estimate to be approximately one third into the scene.

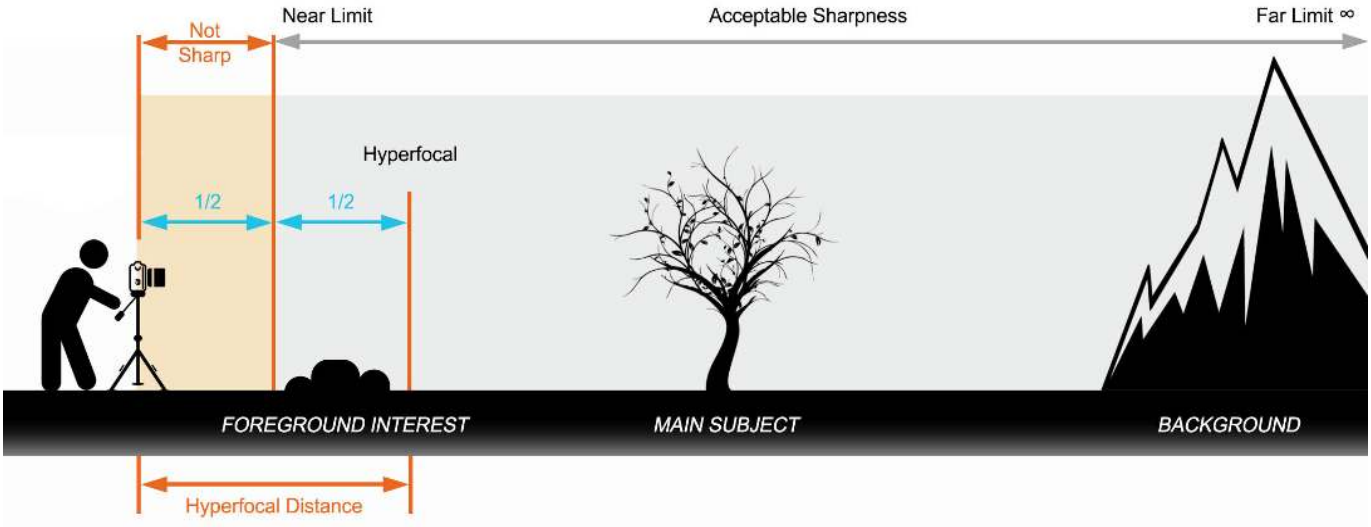
It does work and allows some freedom from the technical side of working out distances, with the down side of not being very accurate. Thought needs to be applied, a third into the scene may be a problem if your'e standing on the edge of a cliff (see below) so think about what one third in actually means when applied to the scene in front of you.

In our Lone Tree diagram above the distance from the foreground to the mountains in the background could be miles and setting your focus 1/3rd in could be too far. Try it, preview your image to check it and adjust where your focus point is if needed, and just your aperture. The advantage with using this method is it's easy and becomes almost instinctive.

HYPERFOCAL DISTANCES

Using Hyperfocal Distances is the method for selecting the best place to focus in a scene and maximising the Depth of Field . It is actually quite simple when used with an App such as *PhotoPills* and it is worth being familiar with.

Hyperfocal Distances is by definition the closest focus point that allows for subjects at infinity to be acceptably sharp. By determining where the Hyperfocal Point is, that is the point on where to actually focus rather than the main subject or the immediate foreground we want sharp, we can get the foreground and the background in focus. Very loosely you have half the distance from your focus point back towards you and to infinity (or your background) acceptably sharp. The problem is how do we find that point? And how do we decide what is acceptably sharp?



Our Lone Tree scene again. We now see that using the aperture we think is optimum for the scene where we place the focus will determine how much DoF we have. The Hyperfocal varies with aperture and the lens used, and we will see how we can determine that.
We are using the optimum aperture which for the sake of argument is f6.3 with the Olympus 8-25mm.

ACCEPTABLE SHARPNESS – The area that can be defined as in focus or with acceptable sharpness. Note that this extends from the Near Limit which is half the Hyperfocal Distance, back to the Far Limit which we want to be infinity. Acceptable Sharpness is partly determined by the scene. Perhaps the background is very soft because of mist or haze in which you would not expect a great deal of sharpness, but it still needs to be in focus.

There are situations when being in focus and being sharp can mean two different things. It is also determined by your lens which may not be as sharp as others. See the example images below.

HYPERFOCAL DISTANCE – Distance from the camera to the Hyperfocal focus point. Notice how it is split exactly in half.

NEAR AND FAR LIMIT – Near limit is the amount from the Hyperfocal where you would place your focus point (or slightly past it, never before it). Notice that it is half the distance from you. This is the area where you would try to capitalise on accepted sharpness extending backwards to include your foreground interest.

By judging where the Hyperfocal can be you are able to determine how much foreground interest will be in focus. In our lone tree example you would not want the hyperfocal to be on the tree because the distance extending back would not be enough to include the foreground. And judging the hyperfocal to be on the foreground means the area in front is probably so close to you that it is not even in the frame, and you compromise how far the far limit is. It will make sense when you look at the App.

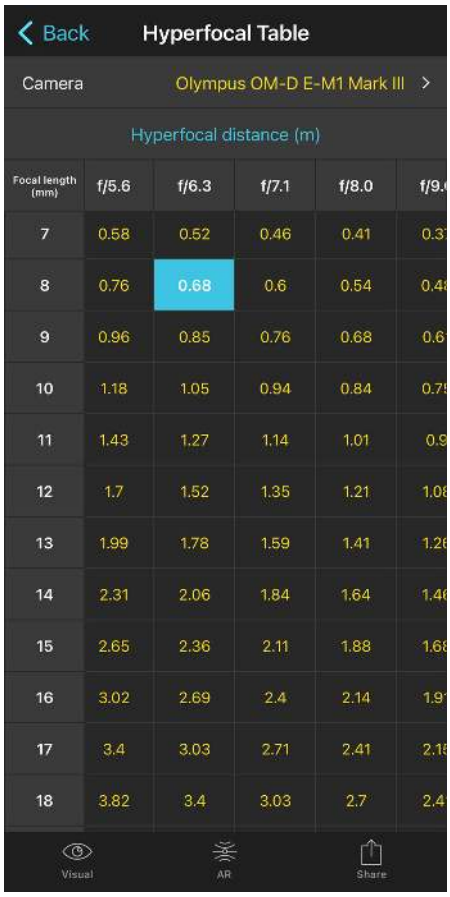
FAR LIMIT - is how far the area of acceptable sharpness is. In most cases we want the this be infinity.

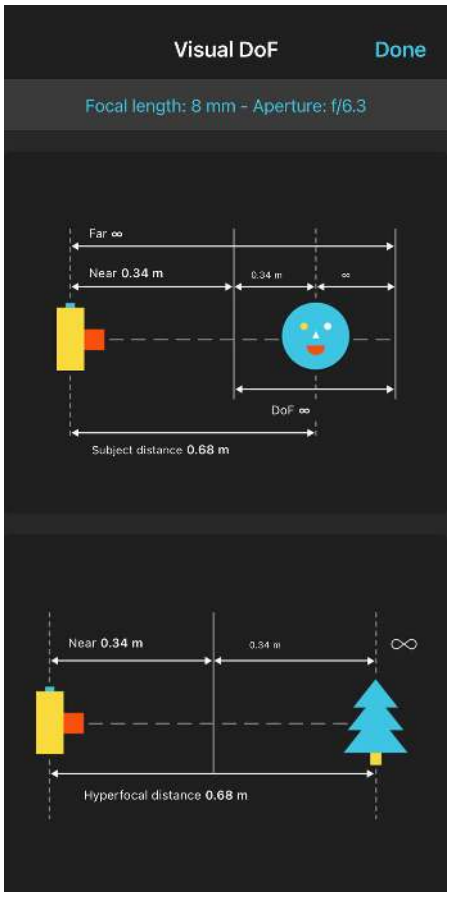
NOT SHARP – The Hyperfocal can be divided into half, with the first half being acceptably sharp. The second half will not be in focus.

SUBJECT DISTANCE – Notice the subject distance? There isn't one. When using Hyperfocal Distances the distance to the subject is not used.

USE AN APP

The easiest way to determine Hyperfocals is just to use an App. There are so many available, my absolute favourite is Photopills (no affiliation), available on iOS and Android for a small cost of around £10. Photopills is packed with other features you will find useful and is worth the cost, we will see some of the other features in 'Planning".





Set camera to E-M1 MKIII Focal Length set to 8mm for 8-25mm Aperture set to f6.3

Top DoF (Subject Distance) 0.68m Bottom Hyperfocal Distance 0.68 Acceptable Sharpness 0.34m to Infinity

Augmented Reality Screen '13mm' indicated you mobile field of view Set Focus outside the Blue line

IMPORTANT- When using Hyperfocal Distances for focus, it is better to set your focus a little beyond the distance given, never before it. If you struggle to focus at the correct distance falling short of it will move your distant 'acceptable sharpness' away from infinity which could impact your background.

HYPERFOCAL TABLE – First set the camera to Olympus E-M1 MKIII. As the OM-1 is not yet listed technically the specifications for the sensor are the same. Select 'Hyperfocal Table' and simply drag it with your finger selecting the Focal Length and Aperture. Once you tap the cell tap 'Visual' to see the graphs. You don't know which is the best aperture to use yet, so try a few and compare the stats to see which will suit. You will see on the table that the Hyperfocal Distance decreases (gets closer to you) as the aperture f number rises (opening gets smaller), meaning Depth of Field is increasing.

VISUAL DOF – Tap Visual to see the diagrams. In this example using 8mm at f6.3 and a Hyperfocal Distance of 0.68m the area of acceptable sharpness is 0.34m from the Hyperfocal extending near to you. Near, or the nearest point that will be in focus is 0.34m from the focal plane. They are both the same. Put simply divide the Hyperfocal in two and that is what will be in focus back from that point. All you have to do is decide what elements in the foreground need to be in focus and select the appropriate settings. Look down the chart and see how much it changes for longer focal lengths and wider apertures. It changes hugely.

The top graphic represents the DoF in your scene from the chosen settings. It shows the same information as the chart below and shows the DoF, which is actually the distance from the Near 0.34m Acceptable Sharpness to Infinity. It also shows a Smiley as the Subject Distance, don't confuse this as the point where your subject actually is, it is where your focus point should be. Your main subject may be further into the scene but you choose this point because of the foreground.

AUGMENTED REALITY – This screen is really neat. How do you figure out the distance to set your focus? Guessing is fine but if you are short it will affect the acceptable sharpness to infinity, so guessing long is fine. Photopills helps with the 'Augmented Reality' function. Enable it and you will actually see a depth indicator on the scene in front of you so just focus on the blue indicator, or just outside it. And if it's dark use a torch.

DOF FUNCTION – Another function is the DoF within Photopills, shown in the 'real World' example above. Whether you use the Hyperfocal Table or the DoF calculators doesn't really matter given the 'Visual' function will provide results based on both. The difference is using DoF you need to enter a Subject Distance, with Hyperfocal Distance it isn't required.

→ **TIP** This is very useful to use out on location but don't obsess over it too much, try to study it at home. Set a few examples and try to remember them, you'll soon find you can judge it from memory and experience and then you can concentrate on composition. Just remembering a few will help, for instance you know already using 8mm you can set .68m away at f6.8 and your DoF is good all day long. And check your images, is the background in focus? If not, make adjustments. When previewing don't zoom right in, although the screens are high resolution they are not high enough so at x14 the jpeg image starts to pixelate and you'll think it isn't sharp. x5 or x7 is enough to tell if everything is in focus. Understanding Hyperfocal Distance is important and you will be able to judge it yourself with some experience, and there are times especially when using a longer lens if you struggle to get the DoF try the App; it will tell you where you are going wrong, or if it is even possible.

DOING HYPERFOCAL MANUALLY

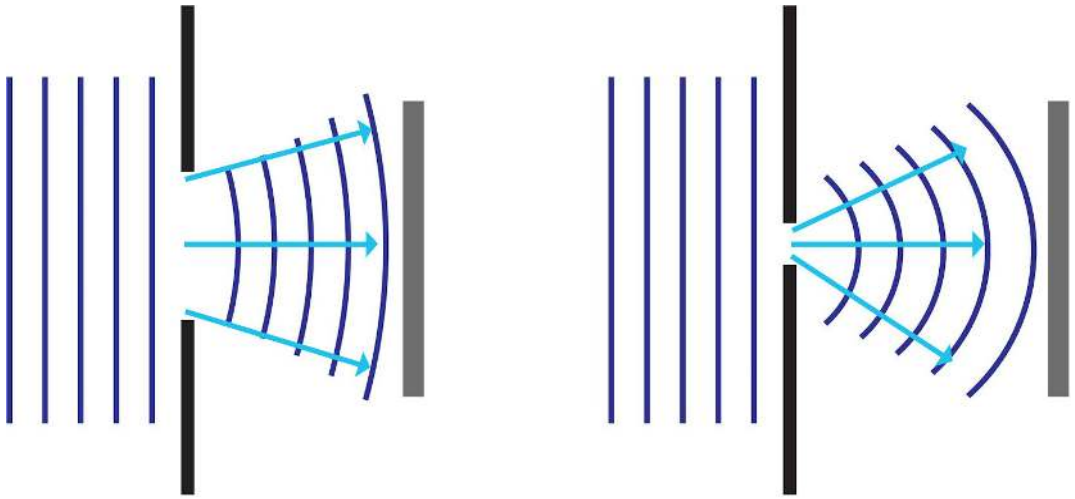
Your mobile died, as it does just when you want it. Or you just can't be bothered to get it out. Work out the Hyperfocal manually; guess the distance to the closest point you want to be sharp, double it, and this will be your Hyperfocal Distance. If the point is 1m away your Hyperfocal and where you should focus is 2m. Remember that the nearest acceptable sharpness is 1/2 the Hyperfocal so this is a simple way of doing it and it does work. The downsides, it isn't accurate so focus on the long side of error, and it doesn't help with aperture. For that you will have to set the one you think best and check the images for sharpness. After some experience it does work and it is the way I usually set focus.

→ **TIP** How good are you at judging distance? There is a feature in the OM-1 that will tell you. ***On the Top Left AF or Super Control panel AF Mode scroll to Pre-MF, and press Info***. Focus on the point in question and a reading on the screen will tell you the distance. Pre-MF is used to set a predetermined focus distance so remember to switch it back to the previous setting.

DIFFRACTION

Most lenses will stop down to f22 or f32 giving the maximum Depth of Field, so why not just use that and not have all the worry? Diffraction. Lenses reach a point at which although the DoF is maximum the sharpness is destroyed by diffraction, eliminating or even reversing any gains in DoF.

Diffraction in its simplest form occurs when light waves entering the lens are forced through a small hole then spread out more and interfere with each other. The actual physics are that the opening and the light wavelength are the same as each other and cause disturbance, but all we need to know is the interference causes the image to get softer especially with small detail. A wider aperture causes less disturbance and hence a sharper image. Most lenses are at their sharpest one or two stops down from wide open (look at the aperture chart above to see what one or two full stops actually is). In most cases this is why we try to use the optimum aperture for DoF and avoid diffraction.



PhotoPills has an online *Diffraction Calculator* which shows diffraction will start to become evident at f11 with Olympus because of the sensor size and pixel pitch. There is a mathematical calculation, (p = (1.22 λ A) / 2) I don't understand it either so let's move on. Cambridge In Colour, another trusted source shows diffraction to be f8. Personally I find diffraction to not be an issue at f8 and not *too* problematic at f11 (Topaz does a great job of sharpening), but over this I know I am fighting a losing battle for sure.

Another fun fact or consequence is called the Airy Disc, I love this name. Light travels in waves, with the central region being the brightest; light spreads out it ripples, just like a pebble in a pond with each ripple representing an Airy Disc. As everything you can see is created by multiple points of light each one hitting your sensor creates an Airy Disc and causes diffraction. Without diffraction we would be able to shut the aperture down to the maximum and not worry about DoF, but sadly life isn't as simple as that.

→ **TIP** It is easy to get overly concerned about diffraction. Using an aperture a little smaller than the optimum is unlikely to create any great impact on your image but it is a fact. And it has to be considered in context too. Just how much detail can you actually see in the background? Is it hazy, in which case the background is soft anyway. Perhaps your ideal shutter speed dictates a smaller aperture. Go for it as long as your main subject is sharp, but remember diffraction affects the whole image. I would not be overly concerned using f8-f11 if I had to, but f22 is never used.

WHEN HYPERFOCAL FALLS OFF A CLIFF...LITERALLY

A situation you will come across, what if your hyperfocal distance means your focal point is off a cliff? Or using the rule of focusing a third in? I was fortunate here because the outcrop on the left was deep enough to focus on, but what if it wasn't?

7-14 Pro @ 7mm ISO200 f7.1 2.5s Exp.

Using an ultra wide lens like the 7-14Pro or the 8-25Pro gives us huge DoF and the rock on the right was enough for me to use for focus. In fact all of this foreground absolutely had to be sharp. If not for the rocks on the left and had I used 1/3 IN or the Hyperfocal from the centre of the scene the focus point would have been on the water below, much much further away, a simple error but one you need to watch out for. Using a narrower field of view such as 12mm would have made it more complicated with less DoF and less foreground.

Let's assume you have a similar scene with just a small amount of cliff edge in the shot. Given a situation where you cannot use the foreground to focus how would we then approach it?

There are two ways to deal with it. Many lenses have a Distance Scale allowing you to set you set manual focus and set the distance. We know (from the Photopills screenshots) using the 8-25mm and .68m as a Hyperfocal would give acceptable sharpness from .34m to infinity. Since the days of Auto Focus the distance scales have become less important, and less accurate.

Look at the 8-25mm scale, it is hardly comprehensive. The 12-100 is similar going to 2m, but after this distance between and up to infinity is hard to judge. Use it with care, over estimate and do not under estimate.

But what if you have a lens without a distance scale? You have no way to set Hyperfocal or use 1/3 IN. The old trick is to change your composition to include ground to the side or even behind you, focus on something that is within the distance and then recompose.

Remember to do this in manual focus or if you auto focus lock it to manual afterwards. Hopefully you put MF onto a button, or use back button focus.

Another way is Focus Stacking. Take two shots, one for the foreground and one for the background or more if you feel it needs it, and then blend them together. It is easy to blend

ACCEPTABLE SHARPNESS

Here's that term again *'Acceptable Sharpness*'. You will also come across '*sharp front to back*' when considering DoF. I prefer to use 'in focus' when describing DoF although Acceptably Sharp is technically correct.

The term recognises that what is acceptable should also consider the gear you are using. Some lenses are not so sharp, though with Olympus Pro lenses that is not an issue, but the Non-Pro 9-18mm for example whilst being a great little lens does suffer from poor corner and edge sharpness. While background detail may not be as sharp as a better quality lens, it is acceptable for that lens, and it has performed to the best it can.

Remember that being in focus and sharpness can be two different things. Another way to look at what is *acceptable* is to consider the scene itself. Both of these images are in focus from front to back and have acceptable sharpness, and yet there is little detail in the distant background because of haze.

12-100 Pro @15mm ISO200 f7.1 1/50s Ex

Bamford Edge in the Peak District. There was a lot of haze, the middle distance has detail but the far distance is just shapes of tone and colour. It is in focus but there is little in detail so I would be wasting my time previewing images, zooming in and wondering what I'm doing wrong because the far background is not sharp. It is in focus and it is acceptably sharp.

7-14 Pro @7mm ISO200 f6.3 1/4s Exp.

Over Owler Tor in the Peak District. Again there is a lot of haze as you can see in the very far distance, so I would be getting nowhere fast being overly concerned with how sharp it is. My DoF only needs to cover the very close foreground and the immediate background of the rising Tor itself. The distant background is in focus but I need not concern myself with how sharp it is.

→ **TIP** What matters here is understanding *Acceptable Sharpness* and *In-Focus*. I have used an old Russian Helios M44/2 lens a few times which has very unique background bokeh, and pretty poor sharpness, but these are what make it unique. Are you optimising the best sharpness of your lens, is it a sharp lens, have you avoided diffraction, and does the scene have any great detail in the background? Make sure you know the answers to those questions. *If you don't, you really should.*

SHALLOW DEPTH OF FIELD

This scene had an overall DoF less than infinity, with the mountain in the background (Ben Nevis) is closer, so we do not always need DoF to infinity. Using infinity means we know everything will be in focus and trying to determine how far the background is can be hard. How far are the mountains here?

This image was quite a challenge. There is no detail in the background and the light was flat, but the way Ben Nevis was partly obscured by mist was appealing. I decided a tight image would suit the scene.

12-100 Pro @21mm ISO200 f8 1/15s Exp x2 shots

Using a longer focal length brought the boat forwards to balance with the close rocks in the foreground. It's a simple composition with a strong foreground allowing the boat to be the hero of the image as it should be.

The DoF was very shallow, too shallow to get acceptable sharpness. Test shots for the water showed 1/15th was the best for the detail I wanted in the water, but to get acceptable sharpness would have needed a very narrow aperture which would have compromised sharpness with diffraction. The other option to maintain shutter speed is increase ISO which I absolutely did not want. The best solution was manual focus stacking. Taking one shot for the foreground all I needed to do was make sure my DoF and acceptable sharpness extended half way into the scene across the pebbles. Then another shot of the boat ensuring enough DoF to include all the boat, the buildings in the background and enough to overlap the pebbles in the mid ground. Blending the two shots was easy to do in Photoshop manually, the mid ground is so busy with pebbles they are easy to blend, and the background has no detail so it doesn't have to be sharp. If the background was not shrouded in mist another shot would have ensured I covered the full DoF.

NO FOREGROUND

An image in the Lake District taken on a beautiful misty morning. The DoF for this was straight forward enough with the lack of foreground, or was it so simple? .

12-100 Pro @30mm ISO 200 f7.1 1/6s Exp.

With an image like this the boat is the obvious place to focus. Consider the mast which comes right towards us, the log floating in the mid-ground and the background. I needed good DoF from the boat to the background including the log. Although the background is shrouded in mist there is still detail from the boats and the masts which need to be 'acceptably sharp'.

There was little movement, but still some movement meaning shutter speed had to be considered. The element I was least concerned with was the foreground mast reflection, it needed to avoid any motion blur but I was less concerned how sharp it was at the bottom edge. As it turned out 1/6th second shutter speed was fast enough to prevent any motion blur and f7.1 gave good DoF.

PLANNING

HOW TO DISCOVER AND PLAN YOUR NEXT IMAGE

In this section we will look at how to find locations, how to plan and make sure you are prepared to capture some great images.

Back in the day when I first started 30 years ago finding locations and inspiration was so much harder. There was no Internet, no Social Media, no Apps and very little connected community. The only way to get inspiration was through books and monthly magazines and just getting out there. Today thankfully it is so much easier to do, in fact the opposite is true, we now have to filter out some of the exposure and prioritise, but it is still a good thing.

Planning is more than just checking the weather, even this was hard to do once. We can break down the planning into two main categories, Discovery/Inspiration and Research/Planning. Let's look at each one.

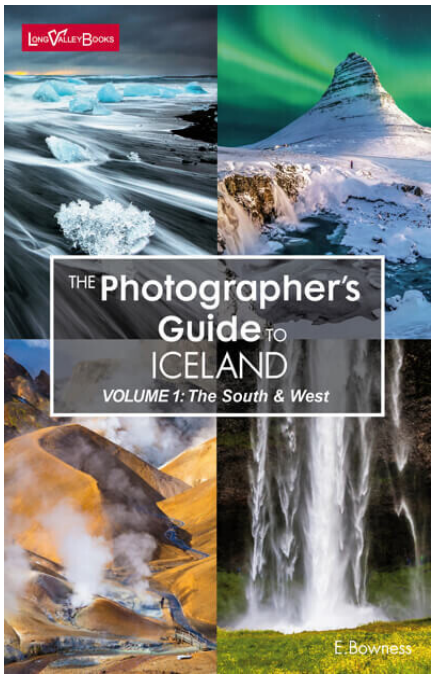
DISCOVERY AND INSPIRATION

I dislike the word 'cliche'. DO NOT BE AFRAID of shooting a location that is deemed a cliche by some. They may have been shot a thousand times before for good reason, they are stunning scenes and you'll generally find the photographer who calls it a cliche has already been and has it in his or her portfolio. It is unfair I feel on those that have not been to a location before, and it will always look different because light is never the same. Yes you have to try harder than ever to get that elusive stunning light, but don't be afraid to try.

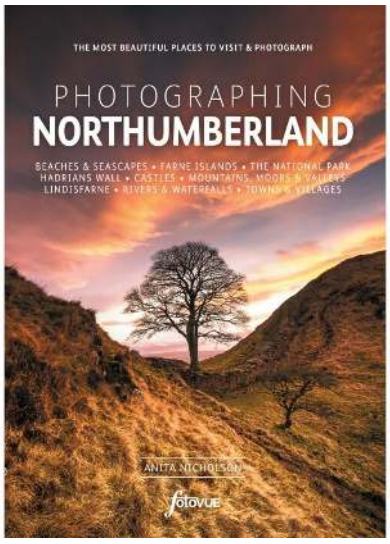
In this digital age it is so much easer to find inspiration and discover places you have never been; we have the internet, social media platforms like Facebook, Instagram and Flickr, we can connect with like minded people easier than ever, travel is so much easier and of course we have publications we can read online or search for and order for next day delivery. Even workshops are so much easier to find instead of having to look in the back of your monthly magazine (I run them too).

PUBLICATIONS

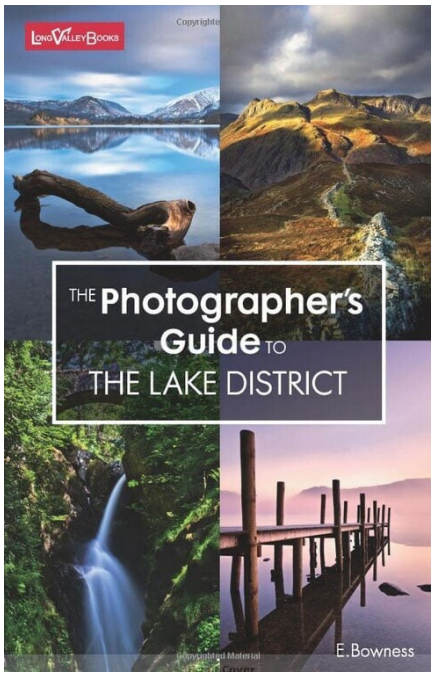
Let's start with publications. There are still plenty of photography magazines around today, they just moved online. Do a search and spend some time looking them over or even subscribe, Digital Photographer, Digital Camera and Outdoor Photographer to name just a few. Search for photography books in your local area, areas you can access easily, or even general photography books. You will find plenty online. Two Photography Location Books I feel are excellent and worth having are the *Fotovue Guide Books* and *E. Bownes' Photographer's Guide* Books. They are worth collecting for reference and I have them all. And bragging rights, I have an image in the E Bowness Photographer's Guide to Iceland.



E Bownes' Photographer's Guides Search Amazon



Fotovue Photography Guides Available on Amazon.



E Bownes' Photographer's Guides Search Amazon

These books do tend to show most of the 'classic' locations, but they do give inspiration and location details. Once you get there you have plenty of scope for compositions of different scenes and viewpoints. And of course you can search online for other viewpoints.

SOCIAL MEDIA-WEBSITES

It seems pretty obvious to say Social Media when everyone's online, but it does surprise me how many people I come across who do not use any social media at all, probably by choice. True they can start to take over if you let them, but for *Inspiration and Discovery* they are invaluable.

Facebook has the advantage of many Groups to join, including 3 I run and probably most relevant is 'Olympus OMD Landscapes'. Find some photography groups to join for inspiration, connect with people and learn about locations. Search on FB for images is not as good as it used to be, and many images will not be public unless it is within a group.

Instagram has a good search feature but in order to have exposure in your feed you need to follow like minded people and avoid all the 'junk' from so called 'influencers'.

Flickr again has a great search feature being primarily a community for photographers. I do not find it quite as good for making connections with people or dialogue and use it only for an online gallery of images, but for searching images of a particular location it is very good. In truth with the way Facebook/Insta are going Flickr is probably one of your best resources now for searching images.

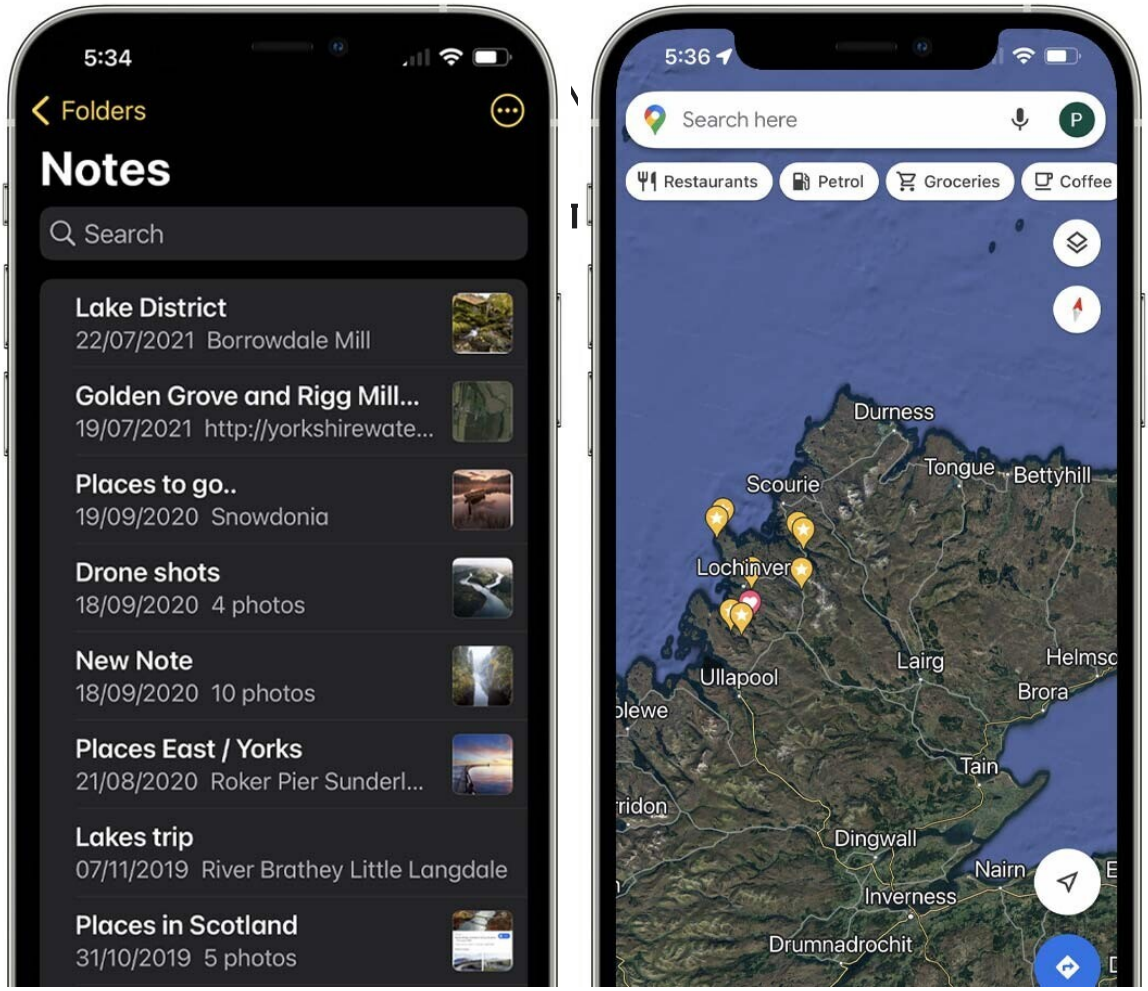
Websites. Once you start to discover photographers you admire visit their website and check out their Galleries. And bookmark them for future reference.

SAVING INFORMATION

Utilise the powerful computer in your pocket, you mobile phone. Whether it is iOS or Android you already have two powerful Apps to use, Google Maps and some form of Notes.

Google Maps Maps has a powerful feature allowing you to drop Pins on locations. Create lists and save them and if you create a Google account you can also use your desktop computer and have the locations you pin sync to any other devices. The screen shot shows locations I visited recently in Assynt, Scotland.

Notes Utilise the Notes app on your mobile whichever it may be. Take screenshots of interesting places you see online, maps, and add your own notes and links. The great thing about notes is you always have them with you and you can organise them to suit your needs



You have discovered locations you want to visit through whatever means and now need to plan it a little better. Where will the sun set and rise, what is the weather going to be, what is the tide if it's coastal, and where to park? It may involve a hike so what route should you take? There are so many things to consider and doing a little research can really help.

Maps are obviously essential and a search in your App Store will show there are so many to choose from. Choice is good I always say, but it is also bewildering. Which should you use? That largely depends on the location and how far it is off the beaten track, and how much you are willing to invest. There are plenty of apps that will provide a wealth of information but at a subscription, and some that are free or just a minor one time payment.

OS Maps is one the the most comprehensive which has a desktop and mobile version, allows searching detailed maps, plotting routes which show distance and elevation, downloading of a searchable database of hiking routes, 3d views and an incredible 3d flythough, offline map saving and even printing of maps up to A3 as a back-up. But it is an almost £30 yearly subscription. There is also a £5 monthly plan which may suit your needs. An obvious limitation is that it is UK only.

Viewranger was one of the most popular apps and is now Outdooractive with a £26 yearly subscription rising to £54. It has many similar features to OS Maps and allows routes to be planned and saved globally. There are many routes that can be downloaded and saved along with saving maps and routes offline to avoid having no data signals and it will connect with a smart watch to give directions too. Augmented reality allows peaks to be identified and there are a wealth of other features however it is really aimed at adventurers and hikers but there are useful features that can be used for free.

There are many such apps available, depending on where you are in the world you may find one that suits your needs. Most are aimed at hiking so if you plan on going up a mountain or somewhere remote they are very useful if not essential to have. Don't for get to be properly prepared for the weather, ensure you have food and water, and have a paper map and a compass.

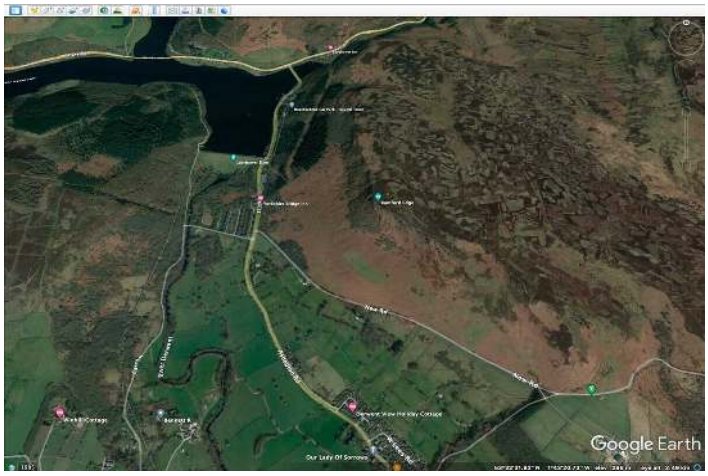
GOOGLE EARTH

It's surprising how many people overlook just how useful and powerful Google Earth is. It has a few useful features for plotting a route, adding pins and an incredible 3d view. Since Google opened up Street View to public contributors there are more and more being added so you can often drill down into actual location views, and if not available it is invaluable for getting a good idea of the specific location you want to find. Even better it's free and global.

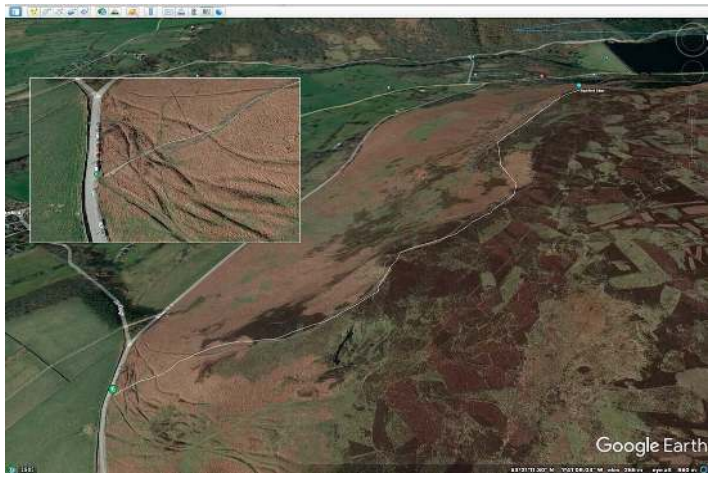
BAMFORD EDGE

Bamford Edge overlooks Ladybower Reservoir in the Peak District and is a stunning location made even better because of the distant viewpoint of water. It's an easy hike to get to after a short but steep section, and it is included in the guide books above.

This is a useful one to show how to find the location and plan a trip



Google Earth location view.



Google Earth route plotted.

Google Earth has plenty of useful icons already pinned and after searching for Bamford Edge Peak District there's already a pinned walking route. If there are icons just zoom in and look for paths, and in popular areas you might see where cars are parked, another useful clue.

Google Earth Street View

Route Elevation and Distance

With the incredible 3d detail of Google Earth you can follow a path and drag the Street View icon onto the route if available to actually look around as in the screenshot above.

On the top right toolbar open the sidebar to see all your places, then use the toolbar to '*Add Path*'. Right click on the path after you save it and click '*Show Elevation Profile*' to see the actual elevation and distance of your route which will update as you move along it on screen.

Of course it isn't always necessary to go into great detail, sometimes you can find a good vantage point just by using Google Maps or Google Earth from the comfort of your own home, like below. I knew there were some good locations for boats on Windermere in the Lake District and Google Maps found me a great spot.

Windermere Sunrise

Maps Street View

There are two disadvantages to Google Earth:

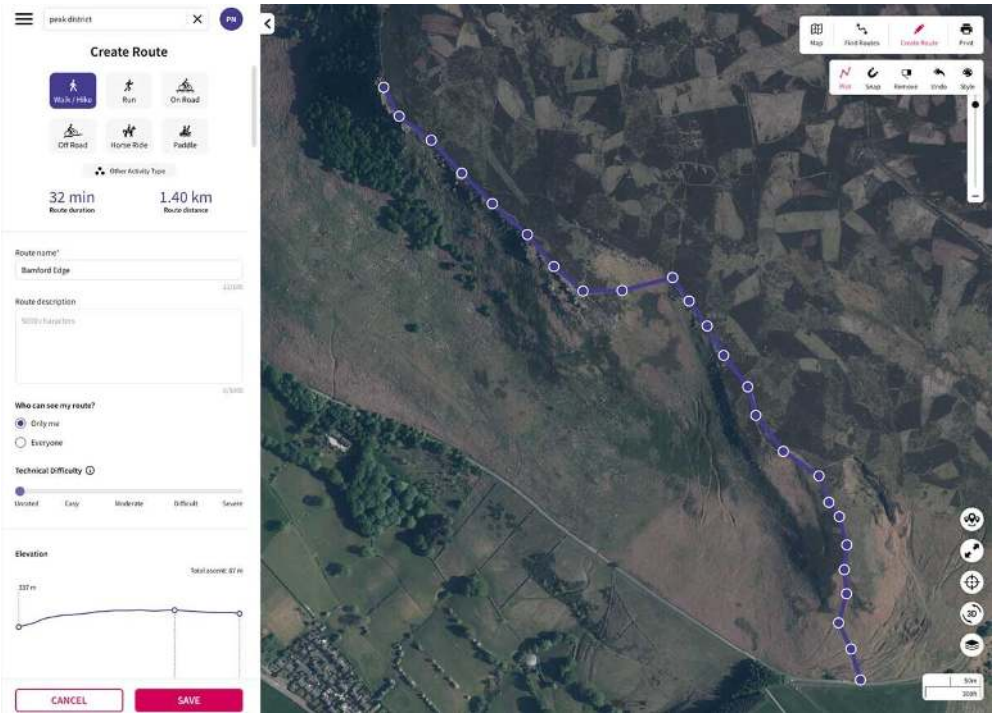
1. Internet Connection – Obviously a necessity if you plan on using it on location and if like me you use O2 it is terrible (I'm dumping them and moving). Taking screen shots and transferring to your phone is simple enough and fool-proof unless your phone dies, I always have an external power bank which is compact and light.

2. No Mobile Synchronisation – You would think it would sync automatically like pins on Google Maps do but unfortunately it doesn't, and it is a bit of a pain to do.

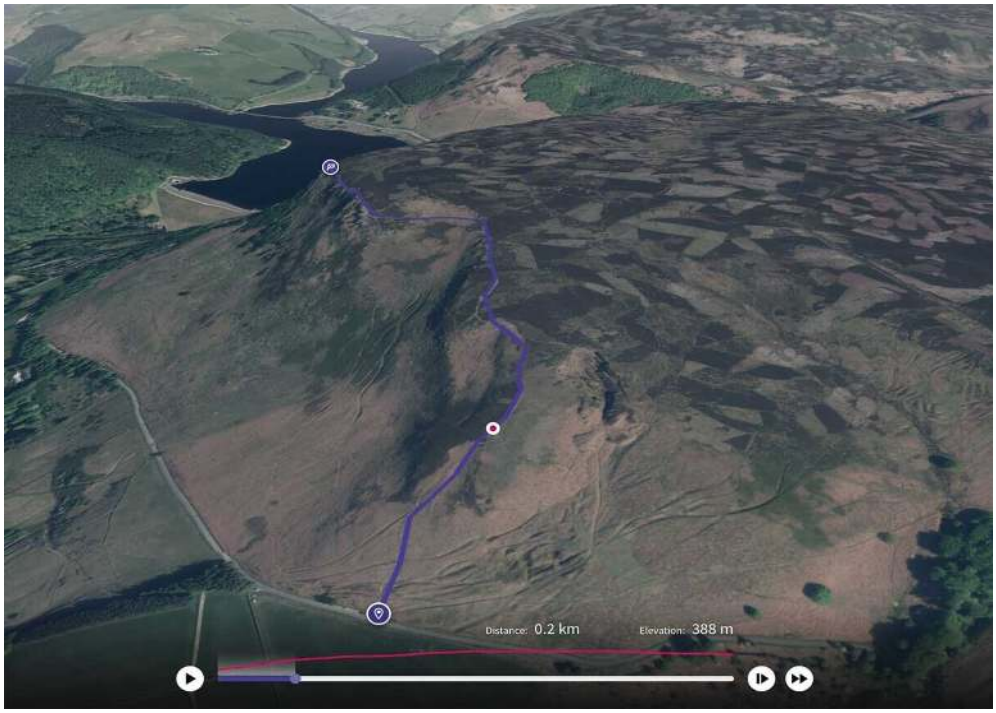
Right click on your save route and select '*Save Place As*', you will see the file is a .kmz file, give the route a name and save it. Where you save it is up to you but it needs to be sent to your mobile, so considering I use Dropbox I save it there. Use Google Drive, email or whatever suits. Open Google Earth on you mobile, click '*Projects>Open*' and import the file from your cloud service or open from Google Drive. It isn't the most user friendly experience, but remember it is free.

OS MAPS

OS Maps Online does have distinct advantages over Google Earth if you are happy to pay a subscription. All your saved pins and locations are synced to the mobile App along with routes, maps can be printed and there is a 3d fly-through too. As stated above detailed maps are for UK only so outside the UK you would need something like Outdoor Active.



OS MAPS planned route



OS MAPS Fly-Through

SUNRISE AND SUNSET

One element you really do need to know is the position of the sun at sunrise and sunset. Even if you are not intending to shoot a Golden Hour image, knowing the transit of the sun at a particular location at a given time of year can help you determine the quality of the light and the shadows.

Two of the biggest names for planning sunset and sunrise are *Photo Ephemeris*, and one you may already have if you were paying attention in the Hyperfocal Distances section, *Photopills*.

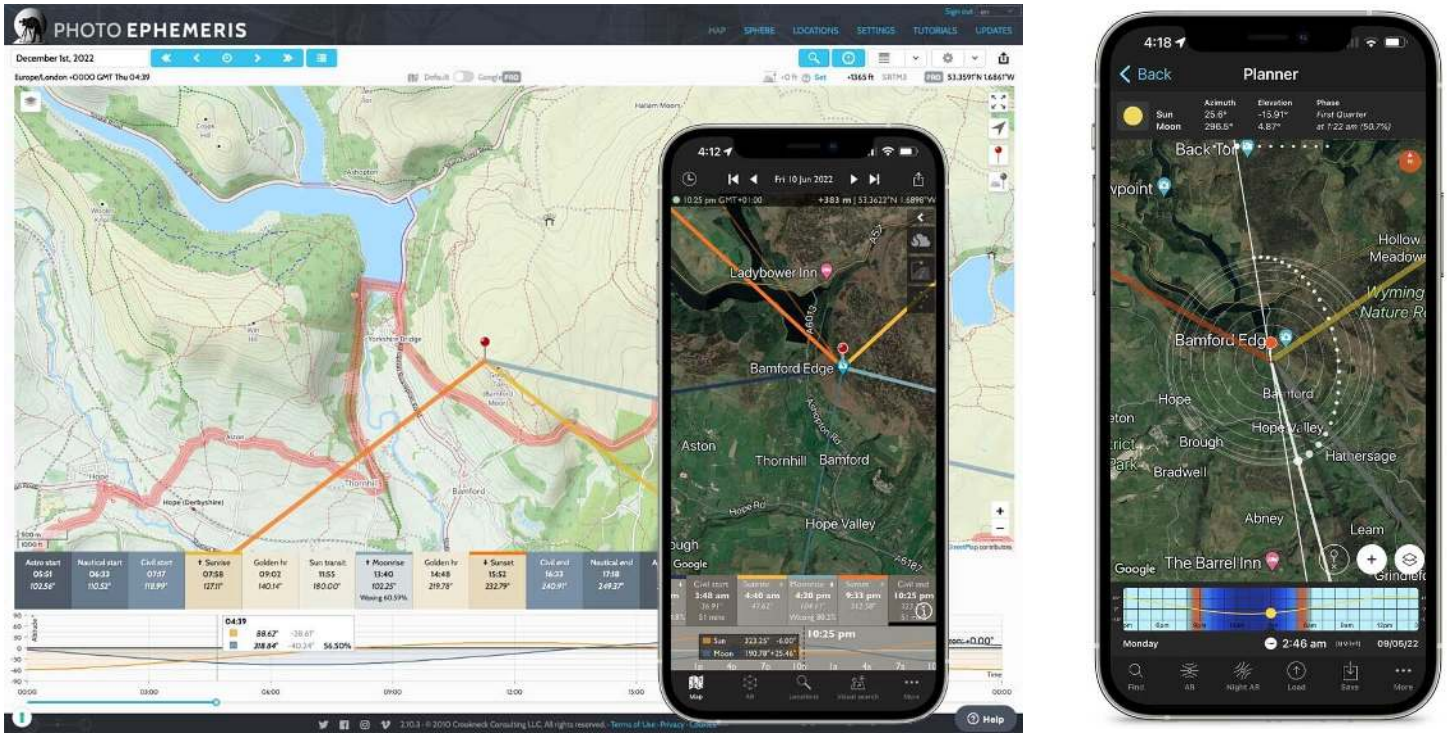


Photo Ephemeris Desktop and Mobile App (iOS only) and Photopills (Mobile only iOS and Android)

Photo Ephemeris has a desktop online app which is free to use and a mobile app for a small payment which is iOS only unfortunately. It does plan sunset and sunrise well with just the free version and will also show Nautical, Twilight and Moon. A great little feature is an additional pin which can be dropped from your start point to show the distance and elevation, or just drop one near the location if there is a steep drop and you want an idea of the height. Go Pro for £27pa and there are plenty of additional features such as 3d terrain modelling with shadows and Milky Way plotting.

PhotoPills also has a planner. In both apps set the date and they will show accurately the direction of the sun at sunrise, sunset and any time of the day allowing you to see exactly where the sun will be, and both also have an Augmented reality function. Hold your phone up with the camera active and see where the sun will be at any time, useful if you arrive early and want to know exactly where the sun will be in your scene, or the best composition with the sun just out of the shot so you can get a little side light. Photopills also has a function which will show the position of the Milky Way as shown by the dotted line.

MOVING SUN POSITION Notice the dates on the *Photo Ephemeris screenshots*? On the Desktop I stepped backwards in the calendar to find the maximum transit of the sun South/West before it starts to return again. On the mobile screen the date is the date of writing, showing the maximum transit of the sun North/West. The transit doesn't move a great deal further North from that date. Look how far the sunrise position changes between December and June! It shows the reason why knowing the position of the sun is important; it's no good going to a location thinking the sun will be Due West at sunset and finding out it's actually nowhere near your chosen viewpoint.

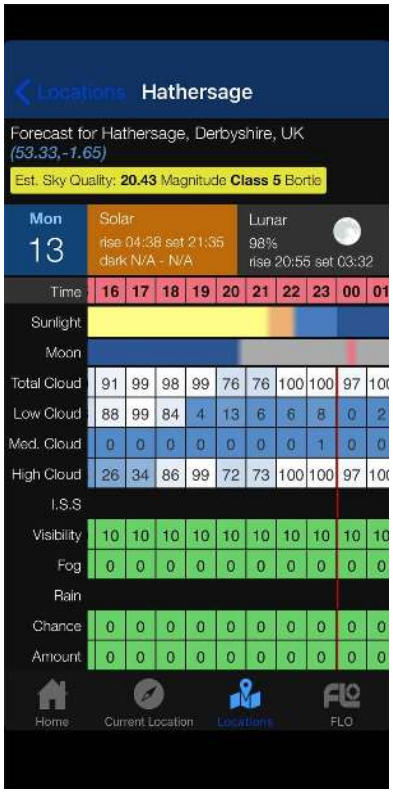
WEATHER

The one thing that ruins many a great image and something we are entirely at the mercy of, weather. My attitude to weather is to just ask two things, is it raining, and is it totally flat grey? If the answer is no then it's game on. In the UK thankfully we have very changeable weather to make things interesting. Even though planning too far ahead is a foolish business it's useful to be able to check it out and try to get an idea of what conditions will be.

Again there are so many apps available it is hard to know which to use. It may be that the default app on your mobile is fine, the iOS Weather App has improved in leaps and bounds, or you may need something more detailed and specialised, for instance to predict Aurora such as '*AuroraWatch*' or clear skies for Milky Way like '*Clear Outside*'. In the UK the Met Office does a good overview however I prefer more data that is presented in easy to use 'at a glance' formats. 'Dark Sky' was one of the best however it was bought out by Apple and some of the data integrated into the native App. The Dark Sky App is being discontinued end 2022 which is a shame. For more detail two of my favourite apps are '*Weather Pro*' and "*Windy*'.

Weather Pro

Windy.com



Clear Outside

Weather Pro – One of the most reliable Apps I have used for years albeit at a cost of £9.99 per year it does give lots of information. There are radar and satellite maps for cloud cover, temperature and rain which are useful, however the best feature for me is the general overview. On one screen it has all the information I need at a quick glance on a per hour basis. Information presented includes total sunlight, amount of sunlight per hour, wind speed and precipitation. Most forecasts give expected rain as a percentage % which only means the chances of rain, Weather Pro also indicates the amount in mm. The screenshot shows between 7-8am there is a 35% chance of rain but the amount is 0.1mm, meaning if there is any rain it is a very light shower indeed.

Windy.com – Free with more information when subscribing I find the free version is enough and there is also a website too at windy.com. It has a great deal of information presented as animations overlaid on maps including cloud and rain, but the best feature is wind and direction. The longer the wind streaks obviously the stronger the wind. Click on a place name and a popup opens with more detail including actual wind speed, weather and amount of rain. In the menu you can even access webcams for some areas and tide forecasts although this is a little more limited. This is a very good app you really should have.

Clear Outside – Aimed at Night Sky photographers Clear Outside does what it says, it shows when the night sky is clear. Look in more detail and it gives good information for sunlight, rain, fog and moonlight but the best feature is the information it provides for clouds at different levels. In the screenshot we can see that in Hathersage in the Peak District on the day of writing at sunset there is 76-100% cloud cover, so no sunset again. Look at the detail though and there is only 6% low cloud and 73-100% high cloud. Therefore there is a good chance of a sunset after all, and just after sunset a very good change of a great twilight image with golden light reflected off high clouds.

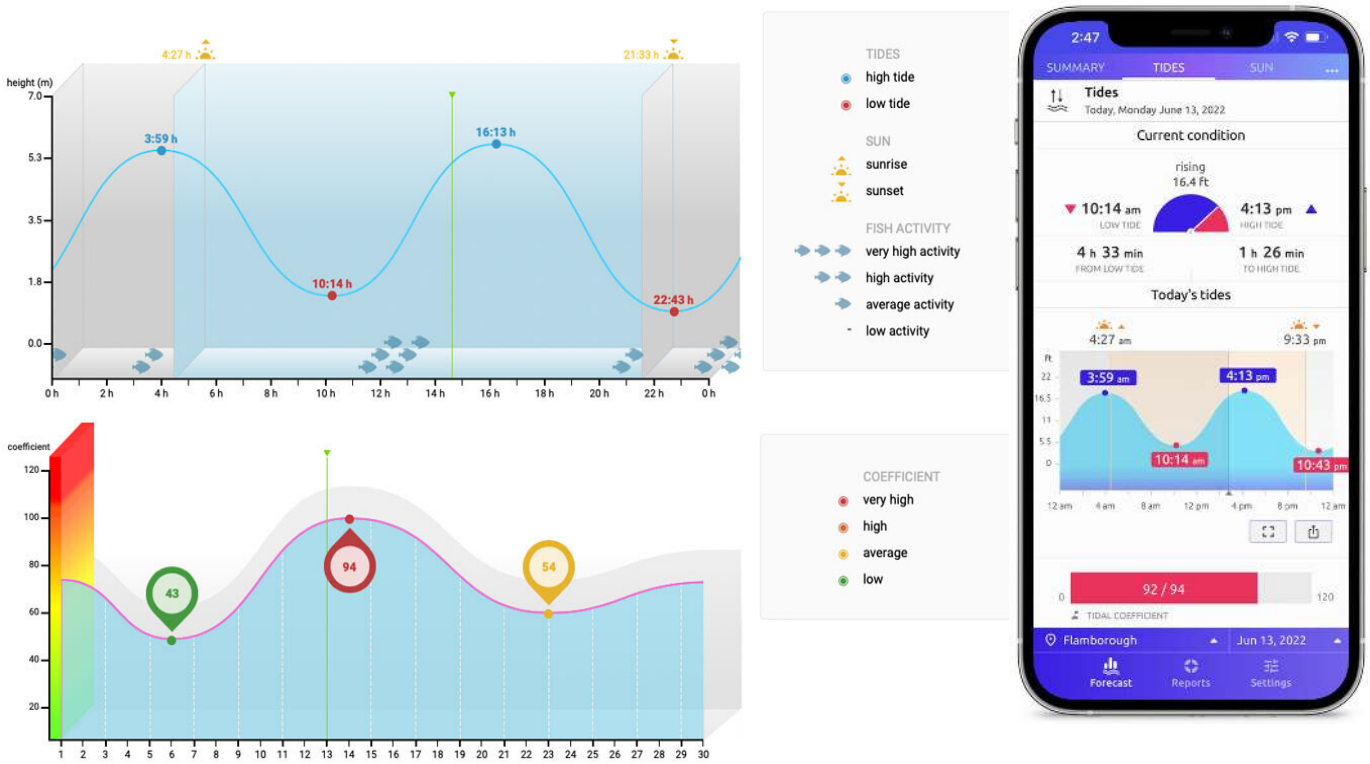
Whichever Apps you decide to use it's hard to find one that does everything and presents all the information in a clear way, so it is always a good idea to have more than one for cross referencing and for more detail when needed.

TIDES

For coastal photography two things you really have to know other than the general weather are the tides to plan your images and your escape routes in case of difficulties. Research your location and find out if it is better at a high or low tide, and then try to plan when the tide coincides with the best weather and light. Is it a sunset or sunrise location? If you plan to be on location for a few hours following a high tide out is always best for fresh clean sand and for safety. And always know in secluded locations how the tide behaves, can an incoming tide easily come behind you and cut you off? For instance walking to a far end of a bay could leave you exposed to having your exit blocked so plan and be safe.

Finding a good Tide App is not easy, there are plenty available but all with high subscriptions or with very short range information and tide stations missing, but the good news is there is a free website that has lots of information.

TIDES 4 FISHING



As the name suggests it is aimed at the fishing community so you will also find details specific to fishing.

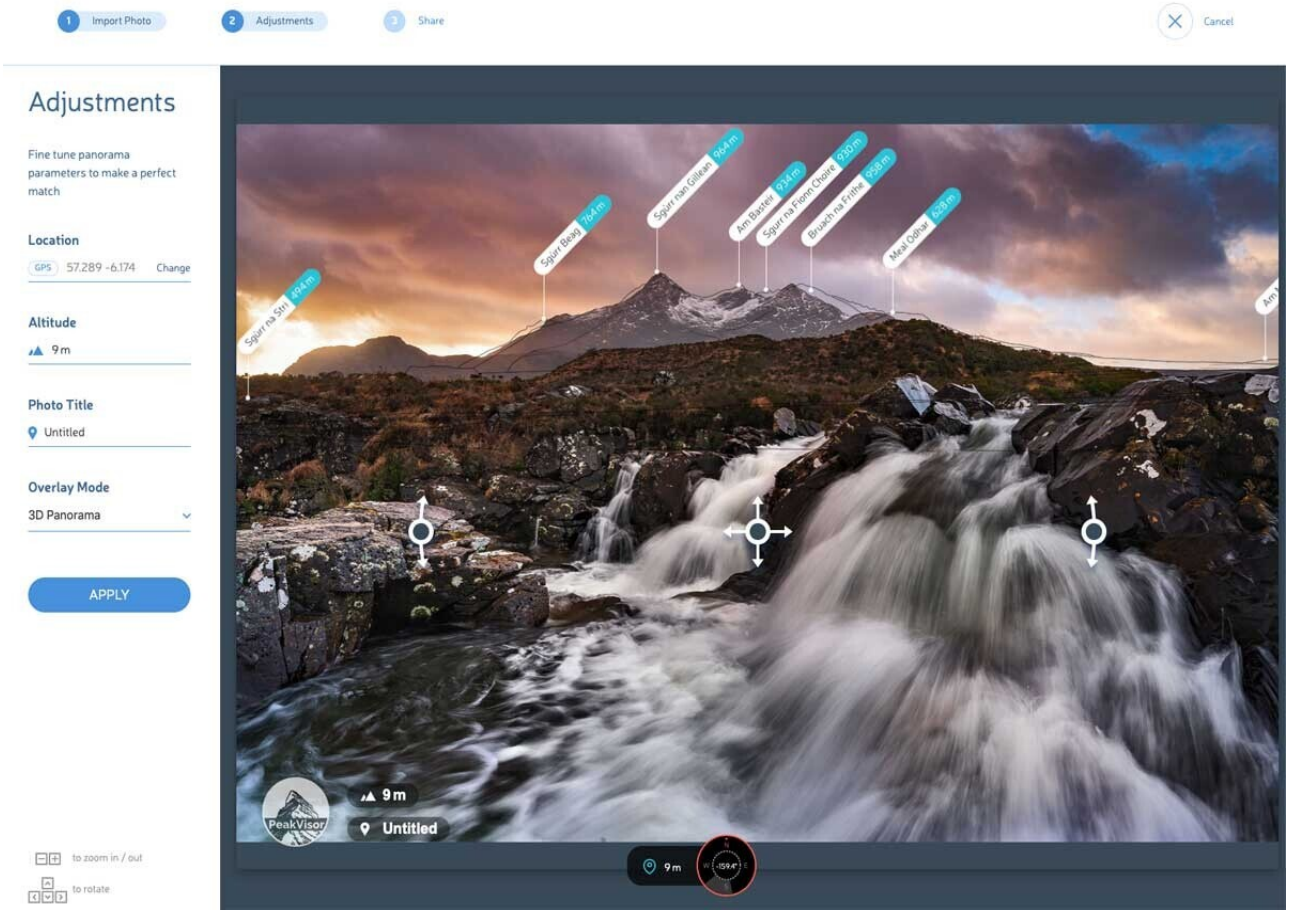
It does have very good information including a comparison to the highest and lowest known tides, and the tidal coefficient or the difference between high and low tides. It is limited to 3 months which is generally enough. The website is a little burdened with advertising but it is free, and as all we want to know is the time tides it does the job very well.

There is a mobile app for iOS and Android which is a £16.99 subscription for a year and it is advertising free. It is a little steep considering the website is free but worth it if you use it often and you want to plan further than 3 months.

MOUNTAIN NAMES

If like me you are absolutely useless at remembering the names of mountains there are plenty of apps around that will use virtual reality and your mobile camera to identify them. Great when you are there, but what if you're back home? This isn't really an essential App but I've included it because I find it so useful.

PEAK VISOR.COM



I can't even remember the name of the next street where I live so what hope do I have of remembering the names of mountains? Zilch. I do like to know the names of the mountains in my images, it's cool and makes me seem educated.

Plenty of apps do this, enable the app and your mobile camera and an overlay will show you what the names are. Not much good when you forgot and you are back home searching the net trying to find out.

Some apps will identify the location from the GPS data in your image, but without built in GPS (like the OM-1) its somewhat cumbersome to record it.

Enter **Peak Visor**. Peak Visor has a mobile App which has really great features but an almost £30 per year subscription. However the online website has a great feature allowing you to load an image, find the location on a map, and the names of mountains or hills will be displayed. It really is very useful.

The map is quite basic, however a workaround is using Google Maps.

> Do your best to locate the place where you were standing and drop a pin. The co-ordinates will then show, copy these and on Peak Visor in '
> *Adjustments > Location > Change*' enter the co-ordinates. You may have to pan around a little but you will be able to match up the outlines, see the names and then take a screen shot. Then when you share your image on Instagram you'll look really clever knowing the names of the mountains.

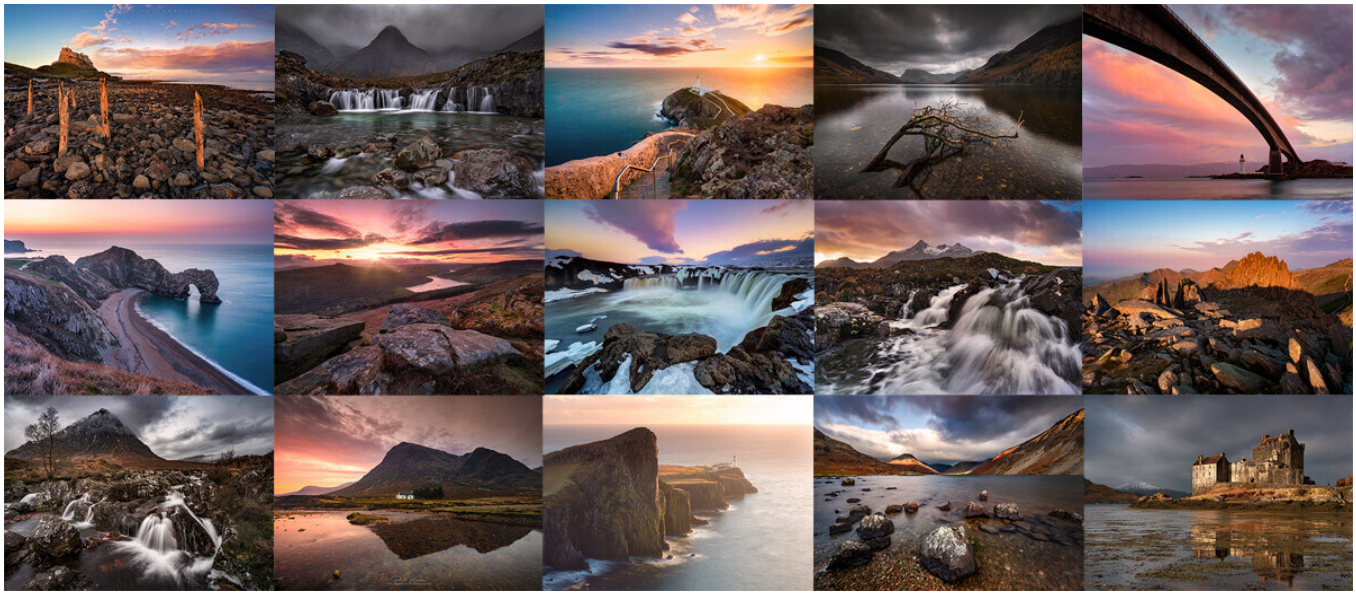
The App is limited to one location per day, however using the image search online doesn't seem to have this limitation. ick this text to edit.

COMPOSITION

CREATE IMPACT AND HARMONY IN YOUR IMAGES

How to create impact in you images using using composition for harmony and retaining a viewers attention.

What is a good image and what does it consist of? Obviously good light, mood and composition. 'Good' light doesn't mean it has to be bright and colourful, indeed the opposite can be true and this in turn creates the mood. A great landscape image with an interesting scene and wonderful mood created by the light can be completely ruined with poor composition.



For a bit of fun to start, take a look at this grid of images (actually my personal Facebook Banner) and consider where your eye is drawn to on each one. Some have lead-in lines, others simply use a point-of-interest. Then come back to it and see if you understand my reasoning for the compositions.

Composition is a huge subject, there are so many 'rules' to follow. Though all my years of experience and teaching I have learned one thing, composition can be taught, but a good photographer has to have an 'eye' for it.

That 'eye' for composition can be refined so that it comes naturally, it becomes more of a feeling with just a passing glance to so called rules, more a notion of what is harmonious and balanced and with an ability to read the landscape. Rules are there to be broken and it's perfectly acceptable to do so, but the rules have to be understood first; breaking a rule by accident will show. The purpose of composition is to create harmony in your image and keep your viewer engaged. This quick rundown should lead-in the right direction (terrible pun intended).

RULES AS GUIDES

All the so called 'Rules of Composition' should be thought of as guides, there to assist in the process but not cast in stone. The Rule Of Thirds for example shouldn't be taken literally, it doesn't matter if a subject is not exactly on a third at all, in fact if it isn't it will follow the Golden Ratio more.

We can break the rules down into 6 main areas:

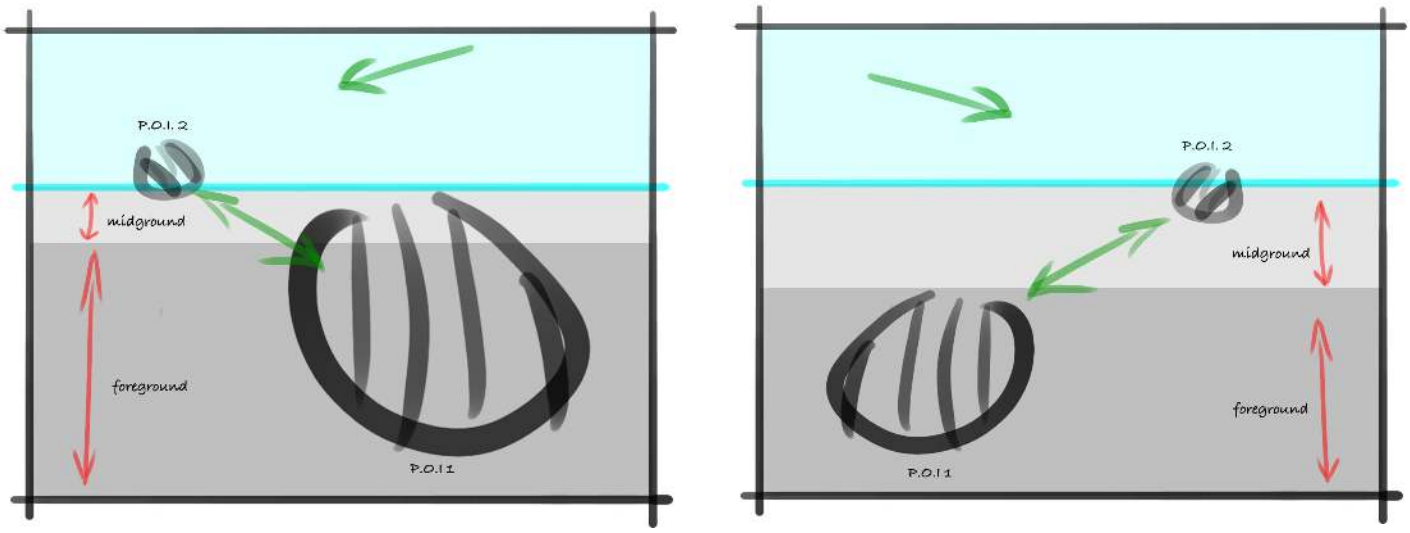
Golden Ratio	A traditional way of achieving harmony
Rule Of Thirds	Using a grid for balance and subject placement
Lead-In Lines	Leading a viewer into the image
Poistive/Negative Space	Defining space and using it for balance
Points of Interest	Main and Secondary subjects in your scene
Viewpoint	Viewpoint height for foregrounds and midgrounds

Understand the guides to help you but don't obsess over them; learning to feel the scene and read the landscape will come naturally after some practice. Your composition should be quite simple based on a clear path the viewers eye should take from one part of an image to another. There may be a main point of interest with a secondary point you want to guide the viewer towards, perhaps using a lead-in line, the golden ratio, or using positive and negative space. Perhaps there is only one point of interest, or three.

Decisions you make at the scene impacts how engaged a viewer is. Lead a viewer's eye out of the image and the composition will fail. The 'Rules' are not mutually exclusive; in most instances you will find once you begin to understand composition it will start to fall into place. Using a main point of interest for example, balanced with a secondary point of interest, lead-in lines will naturally start to fall into place.

COMPOSITION BASICS

I have been teaching composition on Workshops for years and I find the diagrams below which break it down into its basics the easiest way for most people to grasp. This is composition at its simplest using two very basic principles, POI's (Points-of-Interest) and Diagonal Opposites. Using this as a basis means you really can break composition down into very basic elements. Drag the slider to see how this simple approach can change depending on the scene.



This very simple example just uses a main *point-of-interest* (POI), a secondary POI to create a diagonal lead in, and hopefully some clouds enforcing the lead-in. Notice how simple it is, and yet it will confirm to the *Rule of Thirds and Golden Ratio* just by the positioning the POI's.

Other points to consider will be your *viewpoint*, how close you are to the main subject and your height which affects the balance of the Foreground and Mid-Ground, and how you balance *positive and negative space*.

Points of Interest – In each scene you are composing try to find two POI's. One should be more significant than the other and will be the 'main' subject or the point you want to guide the viewer towards. The labels shown here, and the sizes are irrelevant they are simply for clarity. The sizes could be inverted, POI 1 or 2 could be the main subject, it really doesn't matter, and the POI's could be absolutely anything in the scene; a rock and a tree, a cliff edge and a lighthouse, a patch or foliage or water and a hill, a jetty and a boat, a rock in a stream and a waterfall. I could go on but you get the idea. Also ensure each POI has its own space in the frame, too close to edges and the eye can be lead out of the frame.

Opposing Diagonals – Position each POI diagonally opposite and straight away you have created a Lead-In line. Lead-ins do not have to be physical lines, they are simply parts of an image that will attract attention and direct the eye to another part of the image. It's crucial that they are diagonal in landscape format because the eye moves more naturally across a frame on a diagonal rather than a straight line. Conversely in portrait format diagonal lines still work best but they can be directly in line one above the other, although usually the foreground POI would need to be much more dominant for balance.

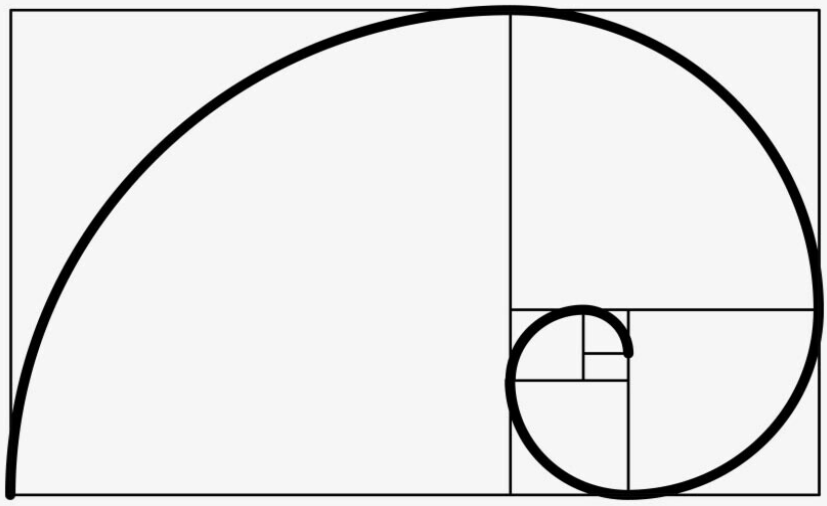
Viewpoint Foreground / Midground – In most cases there will be as well as a background a foreground and a mid ground. How you balance these elements depends on your viewpoint height and the scene itself. You may have a distant lake in the mid ground in which case being low will compress and eliminate it, or perhaps an uninteresting mid ground where being low will focus attention on the foreground and background. The background or the horizon line may have another point of interest you can use to draw the eye back to POI 1 and create a circular movement within the frame. And with any luck you have some interesting clouds that can be used as a lead-in towards the POI.

Using this as a simple basis for composition gives a great amount of freedom. It can be flipped the other way, additional lead-ins can be used, use 1, 2 or 3 POI's, vary the horizon line on the upper or lower third, even use it in portrait orientation.

GOLDEN RATIO / RULE OF THIRDS

The Golden Ratio, or Fibonacci Spiral is a mathematical ratio, precisely 1.618, and represents proportions that our brains seem hard wired to see as visually more pleasing and natural, probably because it is so prevalent in the natural world too. When a curve is drawn through the intersections it creates a spiral, the Golden Spiral, which you cannot help but recognise in the shape of sea shells, plants, cells, weather systems and even galaxies.

It has fascinated architects, mathematicians and artists for centuries, the Egyptians incorporated it as did the Greeks and Renaissance artists used it too, most famously the in the portrait of Mona Lisa by Leonardo da Vinci who was fascinated with the Golden Ratio. Do a search online to see just how much it is used even today in graphic design for magazine layouts, web pages and logo design.



When a square is multiplied by 1.618 and added to it, it creates a Golden Ratio rectangle. Notice how the the rectangle fits within itself again to create further divisions all creating harmony and thus creating the Spiral. We can use these proportions and the Spiral to help with composition.

TIP The Golden Ratio is not quite the same as Thirds. In the Menu Cog>5.Grid Settings>Displayed Grid you can select Grid #2 which does actually follow the Golden Ratio more precisely. Personally I prefer Thirds, but try it and see which you are more comfortable with.

Deer Park Pembrookshire, South Wales-Olympus 8-25mm @ 8mm

The image above taken at Deer Park in Pembrookeshire uses the ***Rule of Thirds*** and the ***Golden Spiral*** with the spiral landing on the headland. The curve of the foreground was included to anchor the bottom of the frame and prevent an expanse of water leading the viewer's attention out of the shot and it echoes the Golden Spiral leading towards the headland of Skomer Island on the left.

This image of Deer Park in Pembrookeshire uses the Rule of Thirds and the Golden Spiral with the spiral landing on the headland. The curve of the foreground was included to anchor the bottom of the frame and prevent an expanse of water leading the viewer's attention out of the shot and it echoes the Golden Spiral leading towards the headland of Skomer Island on the left.

Deer Park Pembrookshire, South Wales-Olympus 8-25mm @ 8mm

The inclusion of Skomer Island acts as a resting place for the eye, an end point as such to stop a viewer's eye from following the horizon and going out of the scene, the intention was to provide another ***point of interest*** and to keep the eye within the frame.

The bright light from the sun is over the ***Thirds*** position to balance the sky on the right, and notice the use of ***lead-in lines*** from the streaking clouds created with a long exposure pointing back to the headland.

In the mid-ground the rocks rising out of the water all appear to lean towards the right with trails of water extending away, all pointing the viewer's eye towards the headland creating a ***lead-in line***.

The ***main focal point*** is the centre of the image; the main headland with caves to explore visually, rocks under the water and the large rocks to the side rising out of the sea which are all placed above the lower thirds horizontal but below the centre of the image for balance.

The line of the caves and the layers of rock all create another ***lead-in*** pointing towards the setting sun. Minor ***Points of Interest*** as detail help to keep the viewer engaged; in the distance a small rock rises out of the water just below the silhouette of a headland which is Ramsey Island; small detail that is not immediately apparent at first act as surprise ' ***Easter Eggs***' only discovered when studying the image, they help to create engagement and discovery. The viewer is rewarded for their time studying the image with these small details which should always be considered an important part of your composition.

You should I hope be drawn into the image and be engaged by discovering the detail and importantly, without leaving the frame.

There are elements that can be explored around the image and they should all bring you back into the centr.

There is also an amount of ***Negative Space***, the water below the horizon with little detail. In this image the ***Positive Space***, the cliff and rocks and even sky because of the streaks in it, far outweigh the negative space. We will explore positive and negative space in more detail.

LEAD-IN LINES

Lead-In Lines are exactly as the name suggests, strong lines pointing into the image to draw the viewer in. In both of the images below it was pretty obvious what could be used as lead-ins by just using the foreground rocks and the natural lines they created. However lead-ins do not always need to be actual physical lines, it could be tones of light, colour, reflections or even how Points of Interest in a scene are balanced.

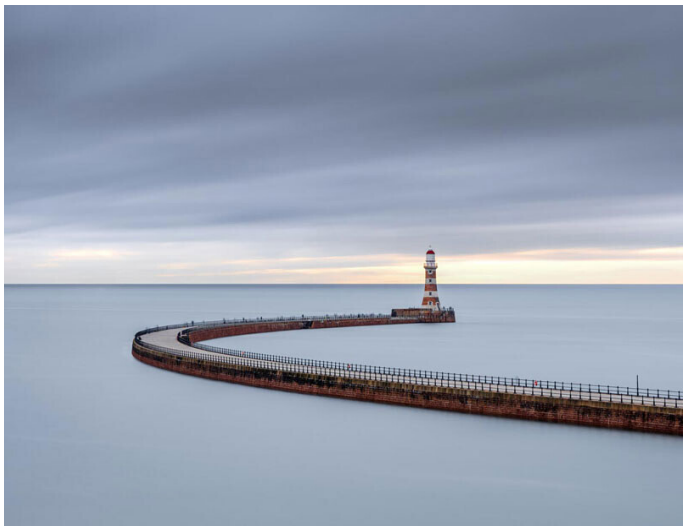
Church Rock North Devon – Olympus 8-25mm @ 8mm

Lulworth Cove Dorset – Olympus 7-14mm

Both the images above have pretty obvious lead-in lines which can be used to create depth going into the frame. Choosing your viewpoint height has to be considered carefully; too low and the foreground and lines will be compressed.

For both of these my viewpoint was around mid-chest height with the camera slightly angled downwards to exaggerate the lines. The image of Church Rock meant keeping one eye on the incoming tide to avoid wet feet. I failed.

Lead-in lines obviously do not have to be straight. Each of these images use a very strong curved line which leads to the main *POI*. The composition is very simple as it should be when there is a strong line; make it any more complicated and there is a danger of the immediate impact. Notice also that in each case here I have observed the ***Rule Of Thirds*** but have not adhered to it strictly. Why is that? Rules can be broken but there has to be a good reason and overall balance has to be maintained.



Roker Pier Sunderland – Olympus 12-100mm

Bamburgh Castle Northumberland – Olympus 7-14mm

Roker Pier – The main POI, the lighthouse is not on a third, I wanted the viewer to stay within the frame so the lighthouse is positioned off the vertical third towards the centre. It give space to the right and encourages the eye to stay within the image, also guided by the light behind it. The horizon is very central, but not on the centre line to balance the image. I often ignore the thirds for horizons, choosing instead to place it where I feel the scene dictates, but always off centre. If a horizon is placed dead centre it will look unbalanced and will look like an image of two halves.

Bamburgh Castle – Bamburgh is tricky because the land horizon on the right slopes, even when the the sea horizon is straight an optical illusion can still make it look like the image is not level, I have even in the past compensated very slightly by tilting it up. In this case I wanted to maximise the foreground curve and remove any dead space on the right on the sand and the land mass itself. I want the viewer to stay in the image focusing on the castle, the water curve and the line of the clouds, not the space on the right of the castle.

GETTING IT WRONG

Sky Bridge – It's obvious from this image that the curve of the bridge is the lead-in pointing in to the lighthouse for the viewer to discover. In many situations focal points can be subtle, they do not have to dominate an image. I included the cottages at the side which had some wonderful soft side light from the first light of the day, but in hind sight did I get this right?

Isle of Skye Bridge – Olympus 12-100mm

I knew something was not quite right and sometimes it can be hard to identify what it is. The cottages although softly illuminated are too close to the edge of the frame and become a distraction, the small gap at the side is awkward and subconsciously attention is drawn to it, we wonder what is just outside the frame.

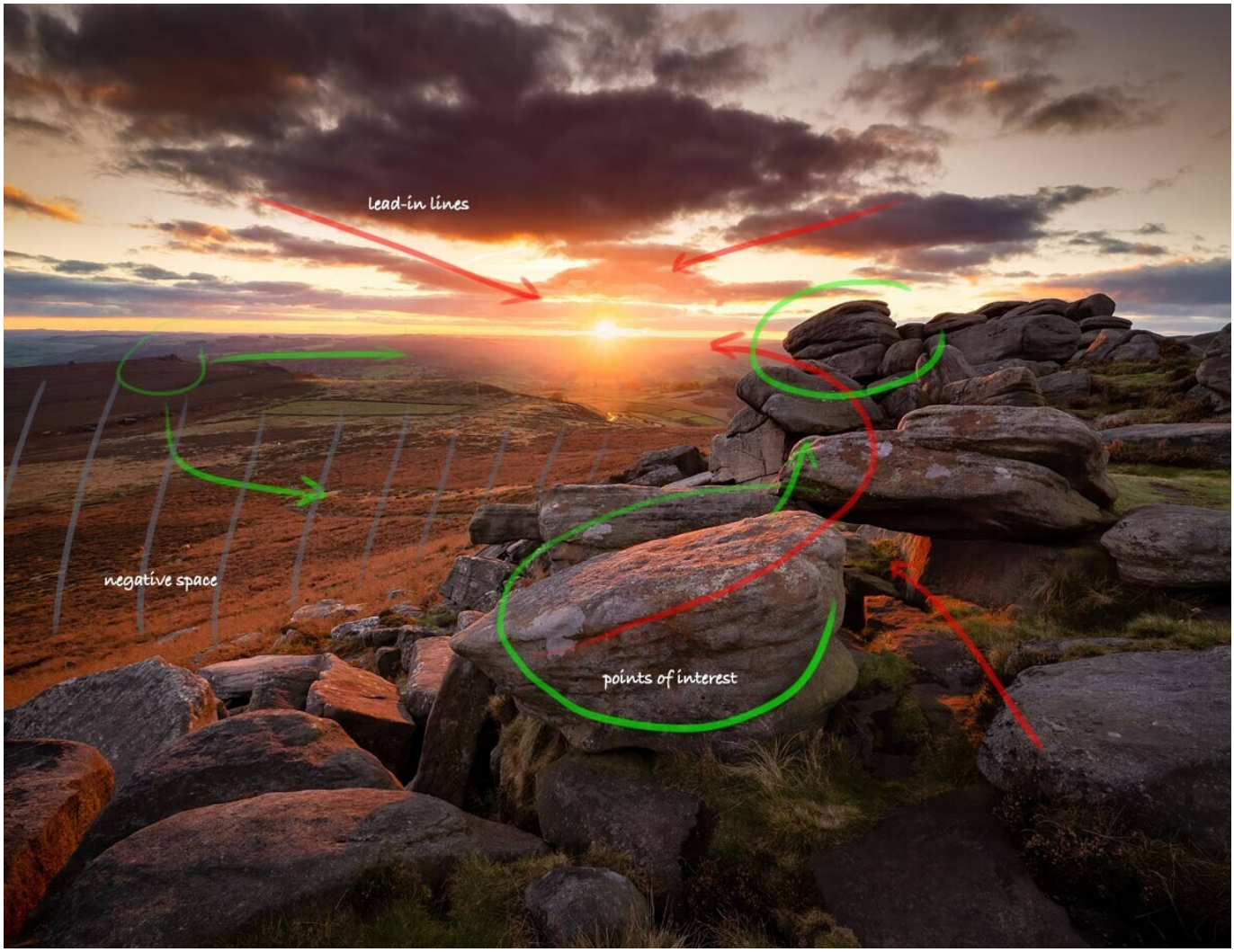
Cropping the image to remove the cottages revealed what was truly wrong with the composition; the bridge cuts the image almost in half diagonally. The sky either side of the bridge is too equal and actually looks imbalanced when having one side larger than the other will create more harmony.

Getting it wrong is fine and it is part of the process, understanding why is the key to improving.

NOT SO OBVIOUS LEAD-INS

This image has a strong ***lead-in***, guiding the viewer into the scene but it is not as obvious as the image of Church Rock and Lulworth Cove.

The edge of the cliff running diagonally across the image leads the eye naturally up to the top rock placed just above the horizon. The large rock in the centre acts as a main ***Point-of-Interest*** because of the light illuminating it; it naturally leads to the rock at the top placed on the horizontal and vertical thirds. Notice the other large rocks on the bottom edge of the frame and the right corner which serve to 'anchor' the frame.



Peak District – Olympus 8-25mm @ 8mm

POINTS-OF-INTEREST There are three main points in this image, the rocks as mentioned above which act to draw attention in, and the sun which is a very obvious ***POI***. A third very minor Point-of-Interest on the left, a small peak which is the silhouette of Over Owler Tor, acts as another 'anchor' to stop the eye following the horizon out of the frame. Small details like this can really help to keep the viewer engaged and provide discovery. Notice also there is a subtle path leading from Over Owler Tor back towards the centre of the image.

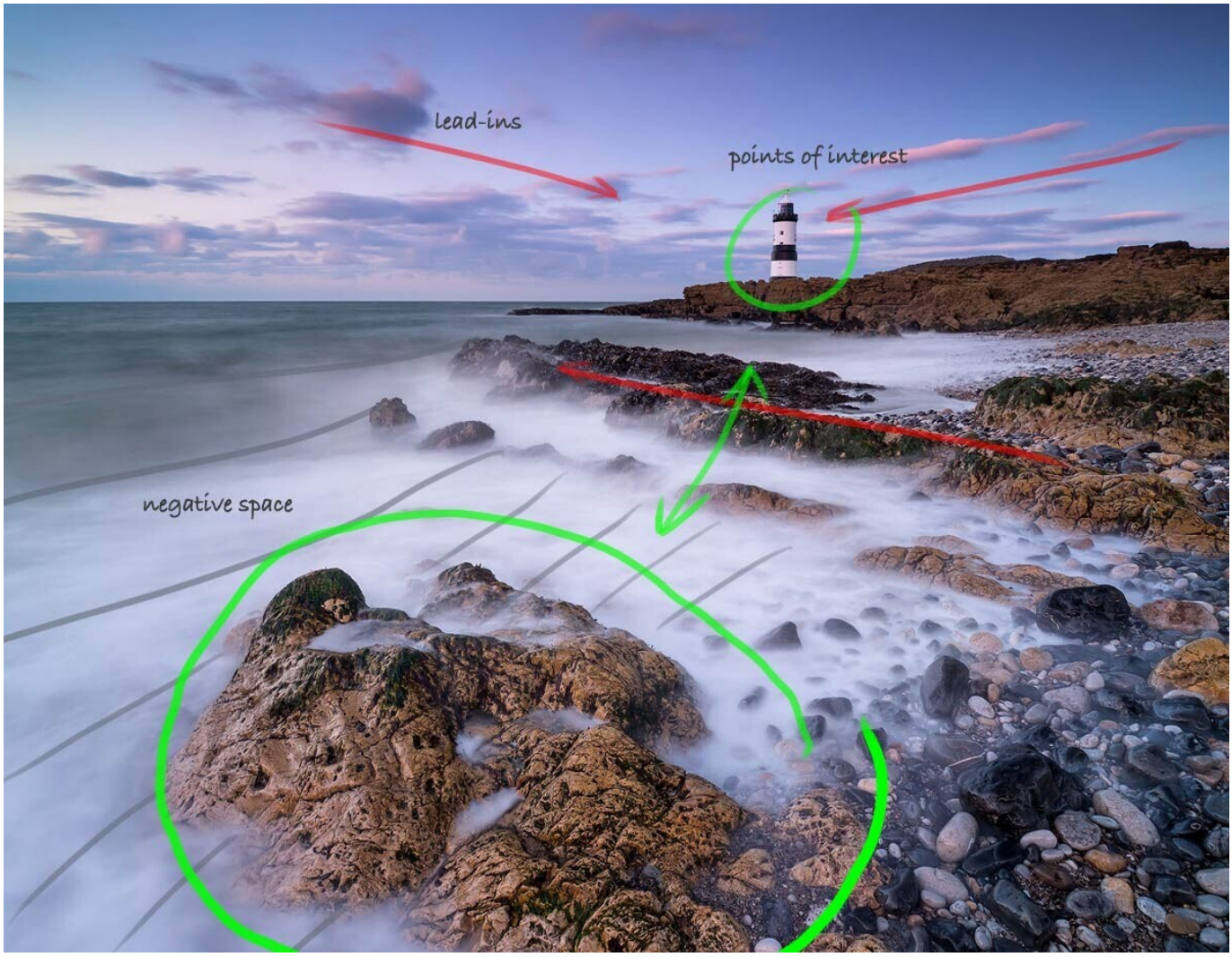
Points-of-Interest can be used to guide the viewers eye, to create lead-ins and also to act as a place for the eye to stop. Imagine a written sentence on a page with a Full Stop. We know instinctively the (.) means stop, pause, end. A small detail on a horizon can serve the same purpose telling the eye to stop when it reaches it. If your image is strong enough the eye should return back to another POI without following the horizon out of the frame.

NEGATIVE SPACE The grey hatched area can be regarded as ***Negative Space***. This is areas of an image that have little or no detail and it is perfectly acceptable, in fact is can be used to create balance and harmony in an image by again using thirds. By using Negative Space as one third, or two thirds of a scene balance is achieved with the rest of the frame which is Positive Space, or detailed. In this image there is the path, and on close inspection a few sheep grazing, all providing little 'easter-eggs' of discovery. The additional detail here meant I didn't have to balance the negative space so much, but I was aware of it.

ANOTHER EXAMPLE

Analysing this image by the rules and technically it should not work but study it and where is your eye drawn to? Hopefully to the lighthouse itself and the large foreground rock.

Look at the rocks in the mid-ground, there is a strong lead-in line to the horizon from right to left, leading the eye out of the shot. I countered this in a number of ways as shown below.



Penmon Point, Anglesey – Olympus 7-14mm @ 7mm

Look at the rocks in the mid-ground, there is a strong lead-in line to the horizon from right to left, leading the eye out of the shot. I countered this in a number of ways;

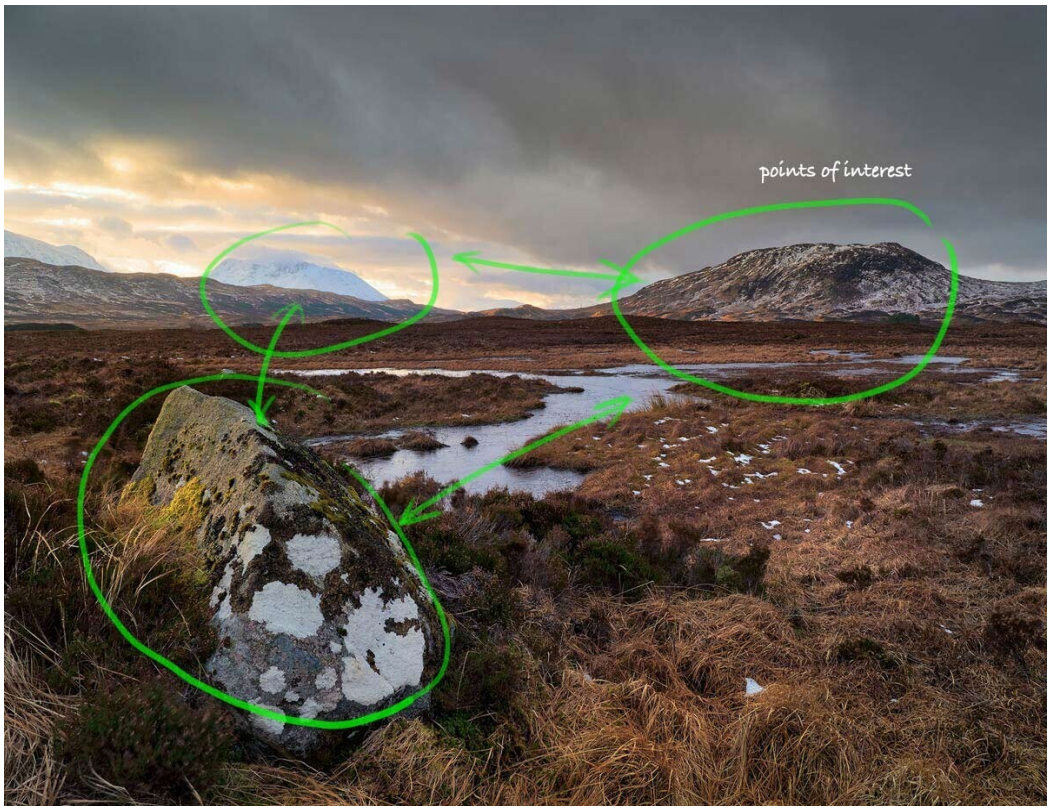
Firstly the sky has enough lead-ins pointing towards the main Point-of-Interest, the lighthouse itself.

Second, the ***negative space*** of the water on the left was balanced to give around 1/3rd and created a diagonal line of the rocks from the right lower corner pointing back into the frame.

And third, the large foreground rock is a well defined shape because of the long exposure and positioning it on an angle towards the bottom of the frame allows the eye to move comfortably from the rock to the lighthouse as a ***lead-in***. The eye moves more comfortably along angles rather than straight lines. The darker tones from the large foreground rock, the right corner, and the peninsula also form a curve naturally flowing along a ***Golden Spiral***.

POINTS OF INTEREST

Points-of-Interest are a great way to create or enforce lead-in lines. Using one main and a secondary POI, or even three, allows the viewer to explore the scene and allows you to guide where the eye actually goes. Which is the main, and which is the secondary POI? Counter to intuition, the main POI does not necessarily mean the biggest. In the image above of Penmon Lighthouse it is the lighthouse itself which I regard as the main POI; the rock in the foreground is simply foreground interest and a guide. Think of POI's as the main and the supporting act; which is which depends on the scene. .



Rannoch Moor, Scotland – Olympus 12-100mm @ 12mm

In this image there are two main points, the rock with the detailed textures and the hill on the horizon. Positioning two ***POI's*** diagonally opposing will create a natural lead-in. In this case the water being diagonal serves to reinforce the lead-in between the two POI's.

Having an additional point of interest in the form of the snow covered hill allows the eye to explore and stay in the frame. Notice also how space is given to each ***POI*** keeping them away from the edges of the frame. When elements are too close to edges the space looks unnatural and there is a tendency for the eye to be subconsciously drawn to it because of the imbalance.

Both of these images break the rules of composition. The first image has one ***POI*** and it is in the middle with the horizon almost in the centre. The second image uses two POI's and they are both centred although the horizon is on the top third. They hardly conform to the rules and yet they work, or I feel they do anyway.

Rannoch Moor, Scotland – Olympus 40-150mm @ 100mm

Lake District – Olympus 7-14mm @ 7mm

Why is this? It *is acceptable* to break the rules as long as it is deliberate and purposeful. They work because the composition is simple and very deliberate. Don't be afraid to break the rules but you must be aware of it and have a purpose for doing so. Do it by accident and it will be obvious.

POSITIVE & NEGATIVE SPACE

I've mentioned Positive and Negative space but what is it and how can it be defined?

We can regard ***positive spaces*** as areas that are dominant in the image perhaps because of detail, colour or tone.

Negative spaces are those that have little or no detail, or tones that tend to merge into one making any detail less significant.

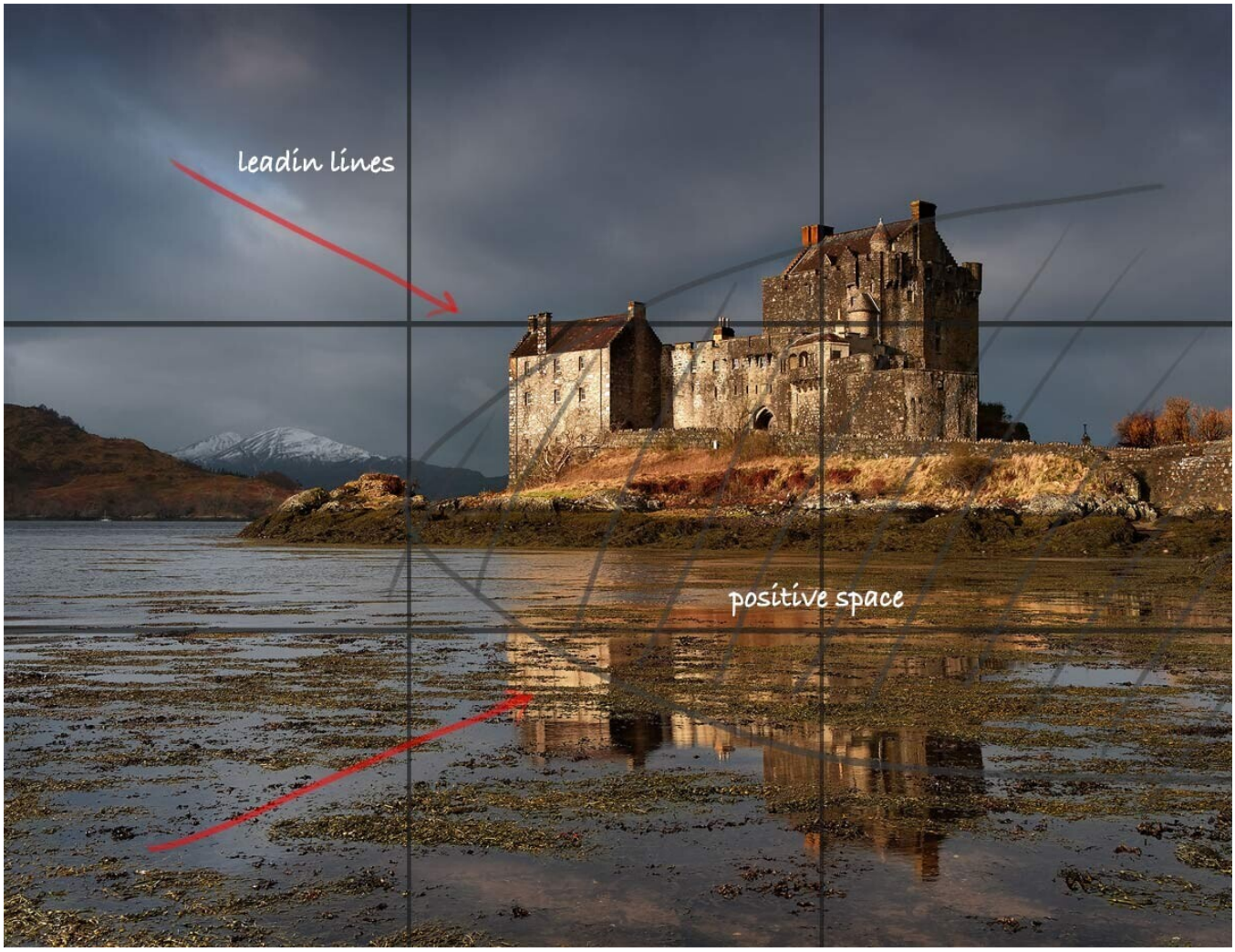
In this image it is pretty obvious that the positive space is the rocks and the lighthouse, the negative space the rest of the image.

Portland Bill Dorset – 12-40mm @ 20mm

Despite the subtle detail in the sky and the lead-ins pointing to the lighthouse it is similarly toned. Balancing the spaces is best in thirds; the positive space is around a third and the the negative space two thirds. It will always create more harmony than a 50/50 split which tends to look imbalanced because it is too balanced.

Sometime the positive and negative space is very obvious especially with large bodies of water and long exposures flatting it. There are time however when it is much more subtle.

Also notice the composition doesn't use the ***Rule of Thirds*** or the ***Golden Ratio***. The horizon is off centre which is fine and the lighthouse is towards the centre where I want attention to be, but not dead centre. If anything I would have liked a higher viewpoint to open the rocks more and extend them further down to the right corner, without moving the horizon. I was as high as I could be considering the wind.



Eilean Donan Castle, Scotland – Olympus 12-100mm @ 12mm

This image of Eilean Donan Castle was a lucky break. The heavy grey sky suited the mood of the location and the warmth of the light on the castle gave some wonderful colour contrast. At low tide there was rather a lot of seaweed disturbing the reflection, but the light was strong enough to accentuate it. I was aware that the castle and the reflection are the dominant parts of the scene, the ***positive space***. The surrounding space is ***negative***; even with the seaweed the water becomes almost the same tone as the sky.

Making sure the main part of the castle was on the vertical third allowed me to balance the spaces, *1/3 positive and 2/3 negative*. The castle takes just under 2/3rds of the space from right to left leaving 1/3 space for the snow covered mountain in the background. Watching the sky I got lucky with a subtle break in the clouds which gives a lead-in to the castle.

Problematic was the horizon, or the lack of a defined one. Is it the water line the one under the castle, or the water line in the background?

The castle is the hero of the image and that dictated the position for me; the bottom of the reflection is near the lower edge but away from it to give space and lead the eye in. The space between the top of the castle and the top frame edge is substantially more to make the most of that wonderfully toned sky, so the 'horizon' falls naturally where it is. having the spaces at the top and bottom of the castle anything close to equal would have ruined the composition.

VIEWPOINT & COMPRESSION

When we talk about 'compression' we naturally think about the use of longer lenses which have an inherent quality of flattening elements of a scene. Parts of the scene in the mid or background are brought forwards and perspective is shortened dramatically, as in the two images below

Roker Pier Sunderland – Olympus 12-100mm

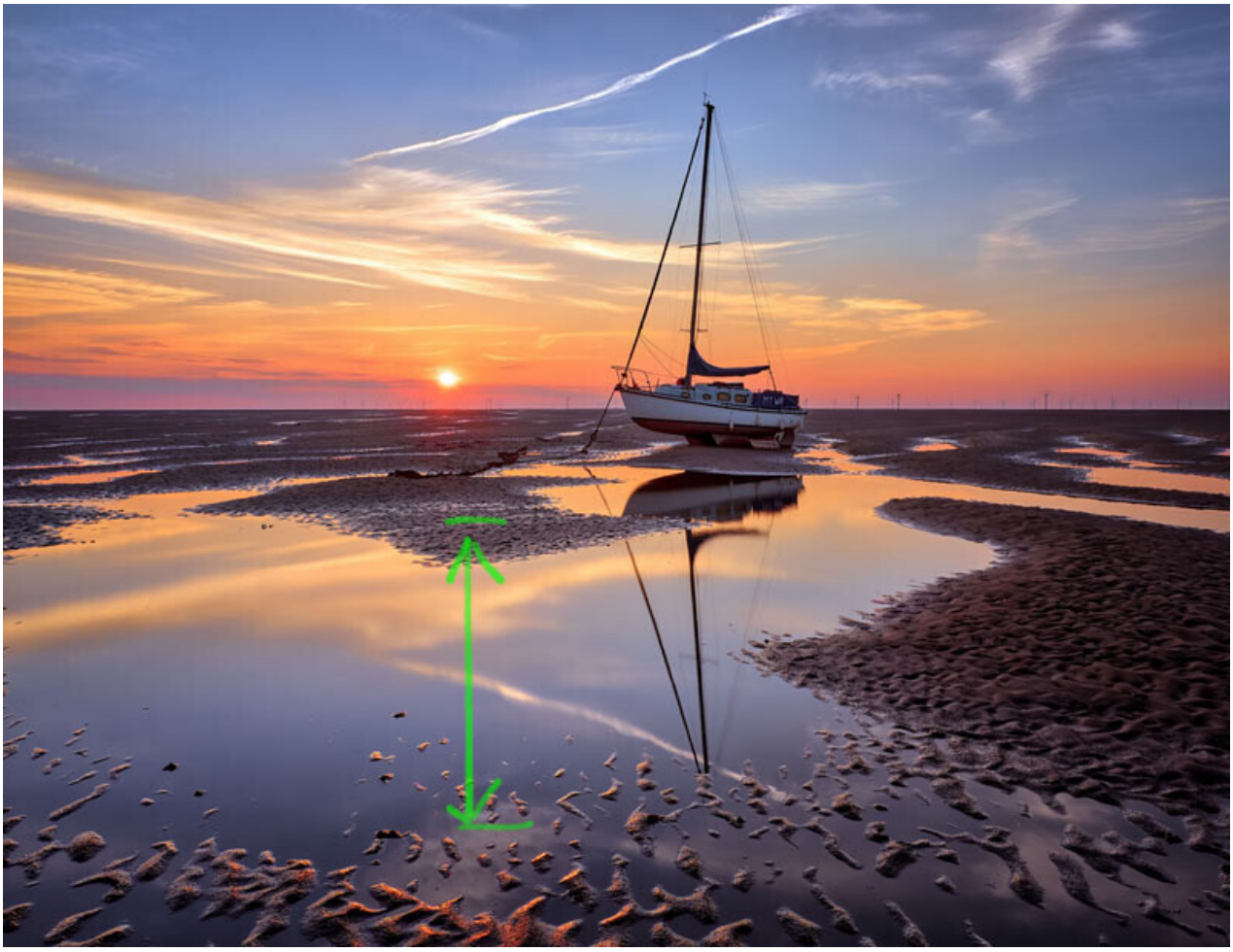
Bamburgh Castle Northumberland – Olympus 7-14mm

In the first image of Castle Stalker in Scotland the 12-100mm lens was used to eliminate any foreground and *flatten the perspective* so that the castle, the rainbow and reflections became the hero of the scene.

In the second image taken over Snowdonia from Glyder Fach the 40-150mm lens dramatically *flattens the perspective* and results in *layering* of the hills.

VERTICAL COMPRESSION

Compression from choice of a long lens should be fairly obvious, and it should be considered just as much when using wider lenses. Consider the compression of the foreground and mid ground simply by varying your viewpoint height. Getting down really low can add drama to elements in the foreground, but it will compress the mid-ground.



Meols Beach, Wirral – Olympus 12-100mm @ 12mm

This image of a marooned boat at Meols on the Wirral had wonderful texture in the sand which would have been more dramatic with a lower angle, but the mid-ground would have closed up more resulting in the mast being lost. In this image I should have moved a few inches to the left to allow a little more space for the end of the mast. Perhaps I will nail it next time. Being aware of the smallest detail really does matter.

→ **TIP** Vary your height and notice how the foreground and mid-ground close, to a point where the mid-ground almost vanishes. It may suit your scene, it may not, but be aware and make decisions. Good composition comes from making decisions.

Lake District – Olympus 12-100mm @ 12mm

The River Brathay image again had to have the mid-ground considered carefully. I needed just enough space to allow for the cloud reflecting on the water and to separate the grasses; being too high would have lost the foreground detail, and being too low would have lost the separation.

Always consider your viewpoint height, perhaps you want to compress the mid-ground, or want to open it up. Think of the scene in terms of three zones, foreground, mid ground and background, and balance them to suit the scene.

MOOD

It's all about the light.

Lastly and most important of all is the light. Or the lack of it. A good image has to have mood; it should be evocative and stir an emotion, whether it is an uplifting sunset or sunrise, or a dark stormy day. The best composition is a waste of time if there is no mood.

Lake District - 7-14mm Pro @7mm

This image from Derwentwater in the Lake District was taken just as a storm kicked in. I have seen low water, high water, calm water and rough water, but I had never seen waves as rough as this. It was with wet feet.

CONSTRUCTING THE COMPOSITION

Constructing the composition means studying the scene and trying to work out how your eye will flow over the elements. It's not likely you have a note pad to start sketching it out, or have an acetate Golden Spiral Overlay to stick your screen. You should use the viewfinder, it's far more intimate, you'll connect with the scene better and be more aware of intruding elements or objects.

Enable the grid in the viewfinder if it helps. Consider the ***Rule of Thirds, Viewpoint Height*** and look for a main ***point of interest*** where your viewer will be most engaged with ***lead-in lines*** pointing towards it. Lead-ins do not need to be physical lines, they can simply be shapes of tone or colour, objects in the landscape, clouds, reflections or anything that will guide the eye to where you want it to be. Some lead-ins are obvious, some not so much.

Secondary Points of Interest help engagement by allowing discovery, the viewer can explore the scene and discover other elements and they should be positioned in such a way to act as a lead-in to the main focal point, and to stop the eye wandering around with no place to rest. Imagine a horizon with little detail, a viewers eye could wander off subconsciously exploring it, but with nothing to discover attention is lost and the viewer leaves the frame.

In OR Out? Elements that have been cut off by the edges of a frame draw attention because the viewer subconsciously tries to complete the whole object. Similarly elements too close to edge have spaces that are awkward and too tight in comparison to the rest of the image. Give elements their own space so the composition looks purposeful and avoid clumsy spaces that draw attention.

Negative Space usually surrounds the main elements of a scene and can be used to give balance and harmony to the image. Consider the positive space and how much negative space there is and balance the two. A third or two thirds to each usually works pretty well as a rough guide, but avoid it being equal.

WORKFLOW

DEVELOPING A GOOD WORKFLOW FOR PROCESSING

This section is not a processing tutorial. Instead it will concentrate on how to get the images organised and which applications to use to process them. Processing images is a necessary function, and the function will run smoother when you have a step-by-step organised flow.

The actually workflow will vary depending on your own preferences; but it should be organised and logical just like baking a cake.

The first step to consider is getting your files organised and having a good backup plan in case the worst happens. I am going to presume you are relatively new to processing and if not maybe you will find a few tips you hadn't considered.

MY WORKFLOW

I use Lightroom and Photoshop and my own Workflow is based around that. I also use other Apps as plugins to Photoshop. It is worth noting you do not have to use Adobe, there are other options available and paths you can take, see below for suggestions. Workflow is a structure for processing images and most photographers will develop their own, some may be similar or very different.

Below is my own Workflow and I tend to follow these steps for every image. You may find a similar Workflow suits you, possibly using different applications. What matters is finding a structure and maintaining it which is the reason it is called a work flow.

1 – *Images are copied* from the memory card to folders set up on my external hard disc drive, never imported directly into LR. See Folder Structure below. It allows me to be organised and find files without having to launch LR.

A first cull of unwanted images is carried out.

2 – *Import to Lightroom* which maintains the folder structure I create. Additional folders can be created inside LR and images moved, the structure will be created on your hard drive.

Never move images outside LR once imported, the location path will be lost. I inspect images, rate them and cull additional images, then process them as I see fit.

3 – *I prefer to use Photoshop for additional processing* if needed, even for just simple steps like Colour Balance, see below. ***Note*** in LR make sure images exported to other applications is set to Tiff
(Lightroom>Preferences>External Editing>File Format>Tiff 16 Bit 300 Resolution.
I also use sRGB Colour Space; although you will see a warning that colour spaces other than ProPhoto do not have the full range of colour you will not see it, sRGB offers the best compatibility for use online and most online printers.
Using the wrong colour space (and not calibrating your monitor) are the main reasons why images shift colour when viewed on other devises, online, or in print. Some tools in PS are more advanced than LR, removing lens flare for example, and the real power is when Layers are used.
Use layers for blending bracketed images, noise reduction and sharpening to specific areas. Using other Apps as Plugins in PS also allows them to be used as layers rather than just creating another copy. To export to PS select an image, right click and select Edit In>Photoshop. Occasionally I use Luminar which has a few very useful features.

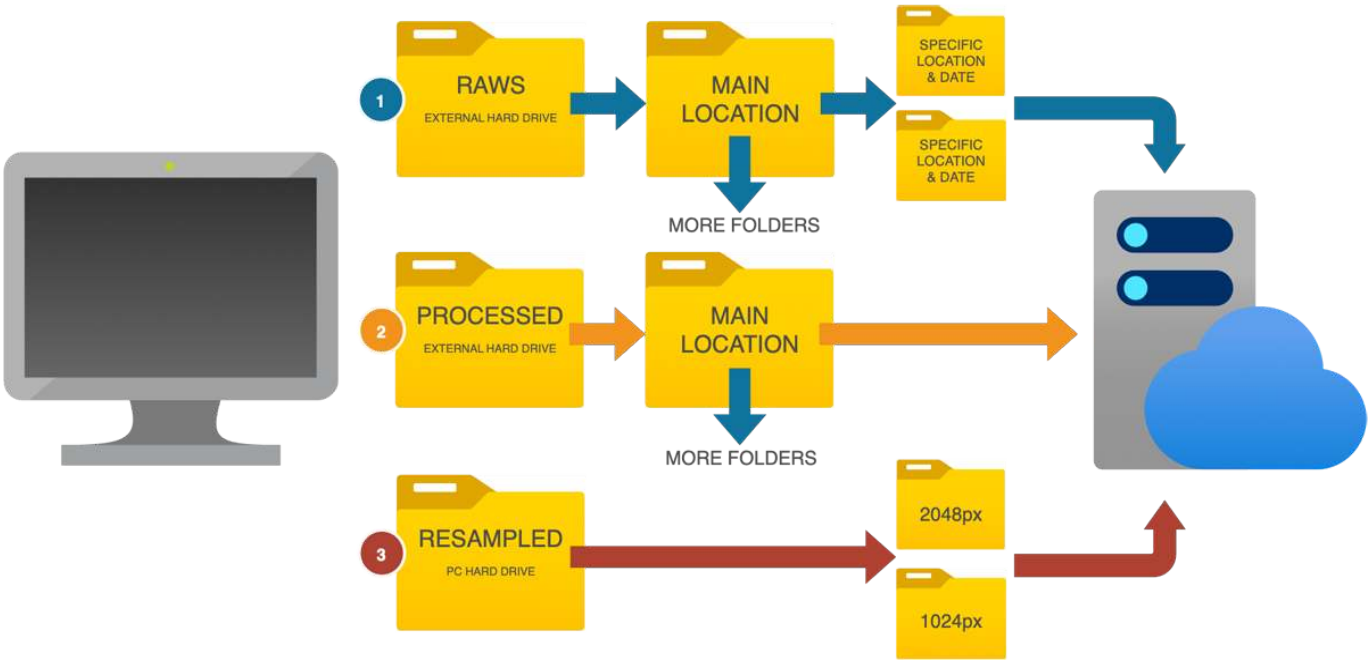
4 – *Sharpen and apply Noise Reduction if needed*. I copy the image as a new layer and use Topaz Denoise (Nik Collection Dfine is also very good). Topaz Denoise will also sharpen if it is needed.
The advantage of applying as a layer is a mask can be applied and any areas that lose detail through Denoise can be brought back into the top layer. The opacity of the layer can also be reduced.

5 – '*Save As' from Photoshop* to the folder where completed images are stored. See Organisation below. Using Actions gives the option to also save additional copies of the image at lower resolution for use online.
Using 'Save' instead of 'Save As' will return the image back to LR as a Tiff if you want to add further enhancements, and if you prefer to export finished files from LR.
Occasionally when I do this I will delete the Tiff file from LR afterwards (I have already saved a finished Tiff anyway), they are very large files and I do not want them to bloat the LR Catalogue size.

GETTING ORGANISED

This is the boring bit, we all hate getting organised but it is crucial. A good plan of how you archive your images with some thought put into it will save time in the future. Remember at some point you will have thousands of images and the last thing you need is having to wade through them just to find one image.
The same is true of all your finished processed images. Organise your images in a way that makes sense to you, including separating original Raw images from your processed Tiffs/Jpegs. Dumping them into one main folder or drive is just asking for trouble.

Think of your *folder structure* just as you would with an old paper based filing structure. How you actually organise it is your choice but it needs to make sense. Some photographers put all Raws into one folder and rely on keywording in Lightroom, then import directly into LR from a memory card, which never makes any sense to me. Others choose to organise folders by year and date.



Personally I like to be a little more detailed in the way I organise folders. Organising Raw images means I can easily find an image without even having to use the Lightroom Catalogue, or whichever App you choose to use. Perhaps I want to load a specific image into DXO or another app instead of LR in which case knowing which folder to look in is a huge benefit. In Lightroom I add a few keywords to images but I keep them very short, *sunset, sunrise, moody, coast* etc.

1 RAWS – Raws are organised into folders by *Main Location e.g 'Lake District'.* I then break them down into more specific locations with the date in sub-folders *e.g Windermere 28.5.21, Derwentwater 28.5.21.*
Doing this means I have one location folder with more specific location sub-folders to help culling on a big trip. Selecting a top level folder allows all images to be shown and having sub-folders means I can drill-down to focus on a particular set.
Another Example: Raw Images > Scotland (Main Location) >Sub Folder > (Glencoe / Date) – (Isle of Skye / Date) – (Assynt / Date)
I often have sub folders inside sub-folders too for when I want to take my time culling images and when a particular trip has many locations. The Isle of Skye for example will have sub-folders for Elgol, Fairy Pools, Sligachan etc.

2 PROCESSED – Once an image is processed it is saved as a Tiff file for the highest quality, in a separate folder to the Raw images. Folders are organised into *Main Locations* just as with Raw images, however I tend not to use specific locations folders so that I can see all images I have gathered in that location over the years.
I may then decide an image I have just taken which at the time I thought wonderful isn't quite as good as one a took a few years earlier. And then get really deflated.

3 – RESAMPLED – Obviously we cannot use full resolution images online for social media or websites so when I save a completed Tiff image I also resample it to a smaller size and save a Web version.
I actually save two versions, a 2048px version for social media and a 1024px for my website using Photoshop Actions (see below). These are saved into sub-folders named accordingly, and I tend not to organise these by location because they are just copies for online.
I do have a copy of the 1024px images which are organised by location, however this is heavily culled and used for my website galleries. When I want to add an image I simply copy it and add to the relevant folder.

Images are always named with location and short description to help with searches if I cannot find an image, for instance 'Windermere-boats-sunset-Lake-District'. Giving a descriptive name will also help jog your memory if you forget the location, and it helps Google index your images. This may look like a lot of hard work but it really isn't. Once you start setting up folders it's very easy to add to them as you start building your catalogue.

BACK-UP BACK-UP BACK-UP

It can't be said enough times, always back-up, as I learned the hard way. I have two external hard drives reserved for images, one with Raws and the other with Tiffs.

Resampled images which are small file sizes are stored on my Mac, which is then backed up along with the attached external drives to an additional 12TB external drive.

Tiffs are then backed up to the cloud on Drop-Box and Amazon. This way I can have my drives with me when I travel and I'm secure knowing I have copies in two additional places.

→ TIP If using Photoshop try using Actions.

Photoshop Actions are a way of recording repetitive steps and saving them similar to a computer macro function. Once saved a click of the action will invoke the steps recorded.

I have '*Save*' actions created for Landscape and Portrait orientation, once I save a new image as a Tiff, I click the action and another copy is saved at the size and resolution I specified when I recorded the action (2048px @ 72dpi) and in the folder I specified. It then saves another copy because I recorded it to do so at 1024px @ 72dpi in a different folder.

With one click I have another *two versions* at different pixel sizes which saves a ton of time. These are similar to creating *Export Presets* in LR which you should do if you don't want to use PS. I use Actions because I always finish processing an image in PS (see below).

When using an Action only one destination folder can be saved per action. The easy solution to this is to save to the main folder (eg 'Online 2048' and then move them at my leisure into subfolders).

Search online for How To Set Up PS Actions.

EDITING APPLICATIONS

Once you have some structure and organisation in place you then have to decide what applications to use, and how much time, effort and money to invest in them. There is no single perfect application and personal opinions will come into play when you research them. Which direction you choose to go will depend on many factors.

There are two basic categories of applications to consider for photography, Raw Image Processors and Image Editors, and the line between them is becoming very blurred. I once saw a description of Raw Processors (such as Lightroom) for creating images, and Image Editors (Photoshop) for changing images. There's some truth to that depending on how pessimistic you are.

The list below is by no means fully comprehensive but includes the main Apps.

RAW PROCESSORS

Lightroom Classic, DXO Photolab 5, CaptureOne 2022, OM Workspace, Adobe Camera Raw, ON1 PhotoRaw.

Raw Processors do exactly as the name implies, processing with a variety of tools and features Raw files. It is best to think of Raw Processors as your *Digital Darkroom*. There are so many to choose from and each has it's own pros and cons.
Some have image catalogues allowing some level of image organisation and management, and some also come very close to being full image editors with features such as layers.
Raw processors are Global editors where the whole image is edited, with some local adjustments possible using masks and brushes.

IMAGE EDITORS

Photoshop CC, Affinity, Corel Paintshop Pro

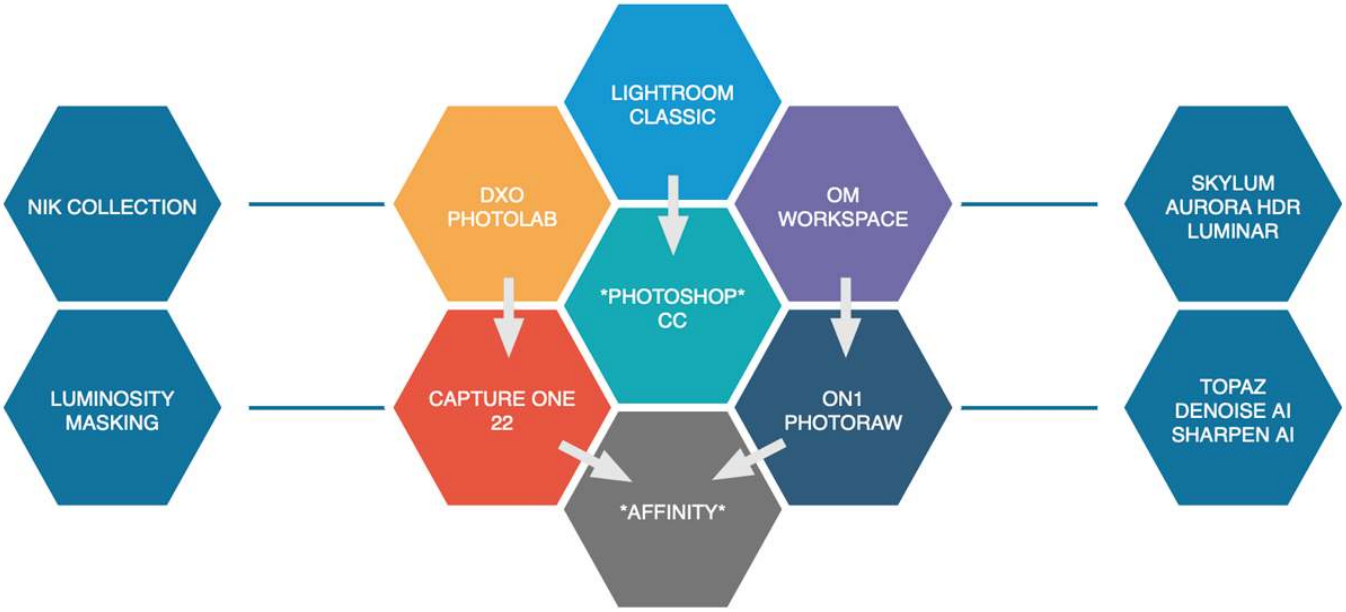
Image Editors differentiate from Raw Processors by allowing much more advance image manipulation and editing. That doesn't mean changing images beyond what was actually real such as stretching mountains and swapping skies (which can also be done in some Processors now).

Image Editors allow for more advanced processing. Using layers and masks images can be merged such as bracketed images and focus stacked images with greater control (see the sections Focus Bracketing and Exposure Bracketing).

The real power with Image Editors is not just the flexibility and control of layers, it is also the greater power of local edit control when just a small part of an image needs to be corrected. The difference starts to become blurred because Image Editors can also be used for processing Raws, but do not have libraries for organising images.

WHICH APPLICATION TO CHOOSE?

This is the million dollar question and one that can only be answered by your particular needs, and budget. The chart below aims to make the Workflow Path of Applications easier to understand visually; Photoshop and Affinity are annotated with an Asterisk (*) because they are Imaged Editors, the other apps are Raw Processors.



To the left and right are additional applications which can be useful and in some cases can be used as Plugins for additional flexibility.
I use these Plugin Apps to some extent integrated with Photoshop. Notice that the arrows on the outer applications do not point to PS but Affinity instead. As LR and PS are a bundled subscription if you do not use LR there is little point in considering PS as an image editor. Personally I would consider Affinity.

In fact if I were really pressed to recommend applications for a processing path it would be Lightroom and Photoshop or DXO Photolab and Affinity.

Personally I use the path of what I feel is least resistance, Lightroom and Photoshop. After years using Photoshop it was a no-brainer to use LR when it was released.
Both together give me all the flexibility I need, there are huge amounts of tutorials available and a large number of Plugins available too (as shown).

Complimenting a Raw Processor (LR) with an Image Editor (PS) does open up greater flexibility and power for processing images, but you do not have to use two applications. You may just want to use one and use the tools at your disposal. That is perfectly acceptable, it just depends on how advanced you wish to get with your processing, how much time you have to invest and of course how much you are willing to let it cost you.

Having said this I do sometimes use DXO Photolabs, although I don't find it as flexible as LR the Noise Reduction and Smart Lighting are very very good. I will sometimes import images into LR, then check in DXO. If I find I like the result in DXO I will export it to LR as a DNG Raw format with the edits retained and then process it in LR. DXO also produce Pure Raw for exporting DNG files with their noise reduction applied but it doesn't include Smart Lighting (balancing shadows and highlights), which I rather like.

COSTS

- **Lightroom / Photoshop – Monthly £10**
- **DXO Photolabs – £199**
- **OM Workspace – Free**
- **Capture One 2022 – Monthly £24**
- **On1 PhotoRaw – £100**
- **Affinity Photo – £48**

Capture One offers a one time licence for £209 but be aware as with all applications these days a monthly subscription includes future updates. One Off licences will include patches and fixes but new features will not be included. Upgrades for new releases are usually discounted to some extent.

COMPATIBILITY NOTE – At time of writing (late May 2022) most apps have been updated for the Olympus OM-1 or updates are imminent. Affinity Photo has not been update yet, however used purely as an Editor for more flexibility it doesn't matter as you would export Tiff files to it. As a Raw Processor you would have to convert files using Adobe DNG Convert first. DNG is a raw format independent of any brands and as such is a global Raw format. Check for updates first.

FILE FORMATS

A quick overview of file formats just in case my presumption that you understand the differences is wrong, we will see these file terms mentioned many times.

RAW – Think of these as your digital negative.
They contain all the information the sensor can possibly capture in its raw state and ignore any in-camera settings you may have set and as such will usually look much flatter than what you see on the rear of your camera. Your camera preview is a Jpeg produced from the Raw even if you are shooting Raw only. Raw offer the best quality and gives much more latitude for processing.
You have greater latitude for opening shadows and recovering highlights with a Raw than with Jpeg.

Jpeg – High Resolution Jpegs give a great quality of image but they are *lossy*.
Meaning each time you open and save a particular image it will lose a small amount of data, nothing you will see just over a couple of times, but edit a Jpeg many times and it will start to degrade.
As such they have a much smaller lattitude for processing after shooting. You should shoot Raw for best quality. Jpeg is fine for immediacy if you don't intend to edit.
A Jpeg is created by the camera with settings (colour, tone etc) as set by the manufacturer. You may see some people state they do not process and want the image as natural as it was on location, forgetting the camera has already processed it with settings an engineer somewhere decided were suitable.

Tiffs – Offer much higher quality than Jpeg.
Tiff files are huge, a 20mp file can easily result in a 100mb Tiff file compared to an 18mb Raw. But they give the best quality of image and they are not lossy when saved as an *uncompressed* Tiff.
Storage is cheap so I archive all finished processed images as Tiffs always. I may have a folder full or Raw images but from that I may only have a small number of processed keepers. Many Raws are culled, some are retained as keepers(?) with the question mark. Rainey days and all.

I don't want to review each and every App, that is not what this section is about. Nonetheless, let's take a look at what I consider the main contenders to use for all of the 'grunt' work, processing Raw files. These are *Lightroom CC, DXO Photolab* and as this is predominantly for Olympus users, *OM Workspace*.

LIGHTROOM CC

Lightroom is one of the most comprehensive Raw Processors available and without sounding like a 'fan-boy' it has it's faults. It has a comprehensive Library feature, Develop Module for processing, plus other sections such as Map, Book, Slideshow and Print. These do exactly as they say, pin images to a map, create a book layout, slideshow, online gallery or proof prints. I've never used them being honest, other than slideshow.

The main features are the Develop Tools which are fully featured, with plenty of options for *global edits* and *local edits* with brushes, graduated filters and selection masks.
Pasting edits from one file to another is easy, 'virtual' copies can be created leaving the original intact for comparison, settings can be saved as *Presets* and there are thousands that can be downloaded if that interests you.

There are various colour profiles that can be selected, excellent tools for correcting uneven horizons and verticals, and bracketed images can be merged as can sets of images taken for panoramics too.
It also has a very logical *workflow* working from the top down and is fairly easy to learn.

It has its faults. Being subscription based doesn't suit everyone although you get Photoshop too, which locks you into the Adobe eco system. And it does not have great Noise Reduction or Sharpening which is the criticism always aimed at it. This is not something I find an issue because I use Topaz for both which I find the best available right now.
The reason I always come back to LR despite flirting with just about every other processor available is the flexibility it offers and the speed at which tools can be used

DXO PHOTOLAB 5

DXO is probably one of the best all round contenders for Raw Processing should you not want to go down the Adobe route. A good Library feature allows for rating and key-wording, although it relies on your Hard Drive folder structure. The *Customise* section where images are processed is pretty easy to learn with a panel on the right and tabs for different tools such as Light and Colour

DXO can make Raw images appear better when first imported (see how richer colour is in these two screenshots) even when the import preset is set as standard. In both the LR and DXO screenshots only noise reduction and sharpening was applied.
In LR a couple of clicks and they are just about the same. DXO has a very good toolset for local adjustments too, although trying to create a radial graduation is very convoluted (a tool I use often in LR).
Lens correction is applied by *DXO Modules* which can actually be manipulated to reveal more of an image. In *Geometry switch off Crop* and part of the image which is hidden due to automatic lens corrections is revealed.
Compare the two screenshots of LR and DXO, in the DXO file there is a third rock on the right hand side horizon. The difference in size is 5184px native compared to 5375px revealed. Not much, but ruin a shot with something just cropped out and it could save it.

What sets DXO apart are the *Smart Lighting* and *Clearview* features, which is lacking in LR (LR has a similar feature called *Clarity* but it is not as good). Although possible to emulate in LR it does take me more work.
What is outstanding in DXO is the *DeepPrime Noise Reduction*, something LR does lack. It is very good indeed, in fact some people use DXO just for DeepPrime to export images to PS or Affinity, which is made even easier with the release of DXO PureRaw (now updated for OM-1), a free standing app designed for that purpose.

It has its faults. There is no way to merge bracketed images in DXO, nor stitch images taken for a Pano, so you'll need another app for sure. Nor are there any Layers; creating multiple masks with different adjustments is possible as in LR, but no layers again just as in LR.

I prefer Topaz Denoise although DXO DeepPrime is probably very close and I am willing to concede both should be on the pole position pedestal. Topaz suits my workflow better though. DXO although a very worthy app to use I find just is not quite as free-flowing and flexible as LR, but if your preference is to avoid subscriptions it is the one to use.

OM WORKSPACE

Most camera brands have their own software for processing Raw files and Olympus has Workspace. Updated with the release of the OM-1 it has some new features and being free it is worth having. Workspace was always clunky, and the update is still clunky. A new feature allowing the OM-1 to be tethered to utilise the camera processor for more power does help, if you want to have the camera connected just to use the app.

There are plenty of editing tools allowing for colour corrections, highlights and shadows and all the other tools you would expect. Panoramas can be stitched if taken in the panorama camera mode and focus stacked images can be merged if taken with a compatible lens.
Any images taken with Art Filters can be edited with the filter preserved in Workspace, the only App that will do so.

Being an app produced by Olympus (now JIP of course) means colours are going to be exactly as they should be, no-one understands colour science as well as the manufacturer themselves. There are some benefits to Workspace, inspecting Exif information you cannot get from other applications for instance. Unfortunately Workspace is just too slow and clunky to use in a serious workflow for my liking.

What is exceptional is the new AI Noise Reduction intended for high ISO images. At standard ISO's I personally see little difference, in fact with noise reduction applied I find a very slight loss in detail, but for high ISO it really does produce good results. Unfortunately you will need a high spec PC to run it. Workspace is needed for camera updates so it is worth exploring to see if it suits your needs. Many photographers are using it just to export files as Tiffs with the noise reduction applied to other apps that are more flexible in use.

PHOTOSHOP

As we saw in the *Sections Exposure Bracketing and Focus Stacking* Photoshop really is the powerhouse of editing apps, and despite the reputation ('Is that real or is it 'shopped?') for over manipulating images, where it come into its own is for using the power of *Layers* and for finishing images.

Photoshop can be regarded as as primarily an ***Image Editor*** rather than a ***Processor***. But it can also be used as a stand-alone processor too using Camera Raw.

The distinct advantage of Photoshop (and Affinity) is Layers and the masks that can be applied to them. Layers are so powerful.

Blend ***bracketed images*** together, ***blend just a section*** of an image you took an additional under or over exposed image for, ***remove people*** (if a person is in frame but moving around, take a couple of shots, stack them together and blend the images together to hide the person), blend images with ***different ISO's*** or ***shutter speeds***, or *focus points*. Learning how to use Layers and blend images is one technique that is quite simple and gives so much flexibility.

Another use for layers is using ***Plugins*** such as *Topaz Denoise*.
I denoise an image as the last step. This is contentious, you will often see noise reduction recommended as the first step; I disagree and prefer to see the noise throughout the editing process so I can control how much I may add, then deal with it at the end.
Making a copy of the layer and running Topaz Denoise means it is applied to the layer, and if I need to I can remove some of the noise reduction by adding a ***mask*** and brushing it away to reveal the original layer underneath.
The screenshot above was blending in an under-exposed frame (bottom) for the sky and water into the main image (top). It could just as well have been a Topaz Noise Reduction later, a sharpening layer, a Luminar Filter layer, or just about anything you can think of.

It is old and passe now, but how do you think black and white images with one part of the image in full colour are produced? Layers.

Other tools such as the ***History Brush*** allow global edits to be made, then undo it and paint back in again, just where you want it. It's one of the tools I use the most. There are plenty of tools available in Raw Processors which I find just easier and more accurate in PS.
Colour Correction for example, I can play for hours in LR trying to get colour right, then send the image to PS and use *Colour balance* to get it just how I want it with a click or two. Or if I want it just in one area undo it again and paint it back with the History Brush.

Also not to be overlooked are ***Selections***. Selections can be created in multiple ways and are simply creating a 'mask' of a particular area to apply a local edit. LR has similar tools, however '***Content Aware***' removal of unnoticed rubbish and tripod legs in PS is incredibly successful and so much better than trying to use Clone brushes.

History Brush is like a magic brush for making overall edits and then applying them locally after undoing the edit (make a global edit with levels perhaps to reduce brightness in one area, undo it in History, select History Brush and paint it back just where you want it without making selections.

There are also a vast selection of ***Plugins*** that can be used in PS to expand the flexibility; ***Topaz Denoise, Nik Collection, Luminar***, and numerous options for ***Liminosity Masks***.
Most Plugins can be used as stand-alone Apps but there are huge advantages using as a plugin to an image editor; use filters such as available in ***Nik Collection*** and ***Luminar***, or Topaz Denoise noise reduction as a layer in PS and areas you do not want the change to be applied to can be removed.
Using as a plugin to LR and applying the change to a 'virtual copy' (a new copy to preserve your original) and the change is applied to the whole image, you cannot remove particular areas of it. It also saves time because it is faster using another App inside another.

It has its faults. Photoshop is not easy to learn.

It has one of the most unfriendly user interfaces when first trying to learn with tools and menus all over the place, no clear workflow and no logic. Photoshop is not just for photographers, it is also a very capable artistic image creator and graphics creator so it can't have a logical workflow.

BASIC TOOLS

Below is a list of the basic of tools and tasks to learn in Photoshop. Learn these and you are well on the way to mastering Photoshop. Using Plugins like Topaz as a layer can really give more control

- Layers and Blending
- Selections- Magic Wand, Lasso, Sky, Subject
- Levels
- Content Aware Fill
- Spot Healing
- Curves
- Hue / Saturation
- Colour balance
- History Brush
- Using Plugins

Layers and blending *are essential along with making* ***selections****. Using the* ***Lasso and Content Aware Fill*** *makes life so much easier for removing unwanted items.*

Levels, Curves, Hue/Saturation and Colour Balance are basic tools which are useful to tweak your edits in LR.

History Brush is like a magic brush for making overall edits and then applying them locally after undoing the edit (make a global edit with levels perhaps to reduce brightness in one area, undo it in History, select History Brush and paint it back just where you want it without making selections. This is my preferred way of working because it is free flowing and gives me freedom, just like painting.

Note – Most Adjustments can be applied with an ***Adjustment Layer***. This means that being a layer they can be switched on/off, the opacity can be changed, and masks can be applied to remove sections. When you get more confident you'll probably just use the History Brush as I do.
In Preferences check ***Keyboard Shortcuts*** and set up most frequently used tools as shortcuts to save time.

AFFINITY PHOTO

Affinity Photo is probably the best alternative to Photoshop available today, and at under £50 it is a bargain. Many people are turning away from Adobe because of the subscription model which seems to be the norm these days. To avoid the Adobe Ecosystem Affinity is the best route assuming you want to use a Raw Processor and an Image Processor.

Remember you do not have to use a Raw Processor and Image Editor, I recommend this path as a workflow because of the additional flexibility you have particularly with Layers. Which Processor you use is personal choice but I would suggest DXO as one of the strongest contenders.
It also depends on how active you are as a photographer considering Affinity will also process Raw images but you loose the ability to build and maintain a catalogue with searches, ratings, keywords and readily viewable Exif information.

Affinity has just about everything available in ***Photoshop***. Full disclose I do not use it since I use PS. I did have the first release which I was very impressed with, and downloading the newest version I struggle to see anything really lacking in Affinity.

It has ***Layers***, ***HDR, Panoramic*** and ***Focus Stack Merging***, a great range of ***selection tool*** and editing tools and it even has one of my favourite tools in PS for editing, the ***History Brush*** (in Affinity '***Undo Brush***').

The layout is a little different, it is certainly better looking than PS and it is well arranged. There are also plenty of tutorials on Youtube. Affinity also allows other apps to be installed as ***Plugins***, although you are best to check first. On1 is compatible, Nik Collection, and Topaz Denoise are compatible although they note Affinity must be downloaded direct and not from the Mac App Store for Mac users (I have no idea why)

→ **TIP** At time of writing (early June 2022) Affinity has not yet been updated to be compatible with OM-1 Raw files although it seems it will at some point. When using Affinity as your only application the work around is to use ***Adobe DNG Converter*** (Free) and batch convert all your files to DNG, a global raw format that is compatible. Of course if you use another application for Raw Processing such as DXO you would then open the files in Affinity as a Tiff so the lack of compatibility is irrelevant.

PHOTOPEA

Photopea is another Photoshop clone and it actually isn't bad. ***And it's free!*** It is an online only application and is more limited in tools than PS but did I say it's free? It's surprising how many tools and features it does have including layers and it will also open a limited number of Raw formats, no Olympus Raws but convert them to DNG and it will open them. Photoshop and Affinity are better options, but to access something online with no cost its very good. It will also suite mobile as long as you have a data connection.

TASK

With Photopea being free I'm going to assume you have never used an image editor before, so try this to get an idea of what Layers can do as an example of how you can extend processing techniques. Let's pretend you have two images for the same location and you under-exposed one image to reduce the brightness of the sky to mere together.

1- Open a landscape image, any image. We will pretend you have a bracketed image, click the image *layer thumbnail* in the right *Layers pallet*. Drag it down to the *New Layer Icon* on the bottom (to open a bracketed copy you would use *File>Open & Place*).
Click the Top Layer thumbnail to activate it.

2- Now on the top Menu Select *Image>Adjustment>Levels*. Reduce brightness on the layer to make the sky darker, just enough to look good.

3- Make sure the top thumbnail is still selected, then click *Magic Wand* on the left toolbar. Click the sky, and notice a new toolbar opens at the top with circle icons, *Replace, Unite, Subtract, Intersect*. Click *Unite* and select more of the sky, and alter *Tolerance* to suit. Use *Subtract* to remove areas that have gone too far. When your'e happy, at the bottom of the right Tool Bar make sure the active paint colour is *black*, then on the bottom of the *Layers Palette* click *Add Raster Mask*. A mask is added and the darkened sky is showing over the brighter image layer below.

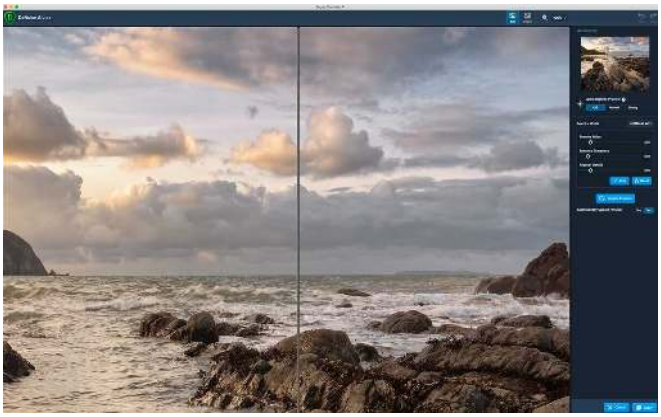
4- Click the *Paint Brush*, select white paint, and brush over any areas on the top layer that should be removed. Alter the size of the brush, the opacity and the softness (low opacity and soft is better to build it up). Then select *Layer>Flatten* to flatten the image and then save it.

You've just created your first manual blend of two images and for free.

True you can do this in LR by selecting the whole sky in one step and then reduce the tone, but you cannot layer another image.

You may want to blend in a patch of water that was too bright on a waterfall. An annoying person is in your frame but he is moving. Take two images with the figure in two positions, stack them as layers, add a mask and paint out the person to show the image underneath with no person in the way.

Flare in your sunset? Take another with you finger over the sun and the flare vanishes. Stack them as layers and paint away your finger. Once you have done it a few times it gets very easy to do, and this is the power of Layers and Masks.

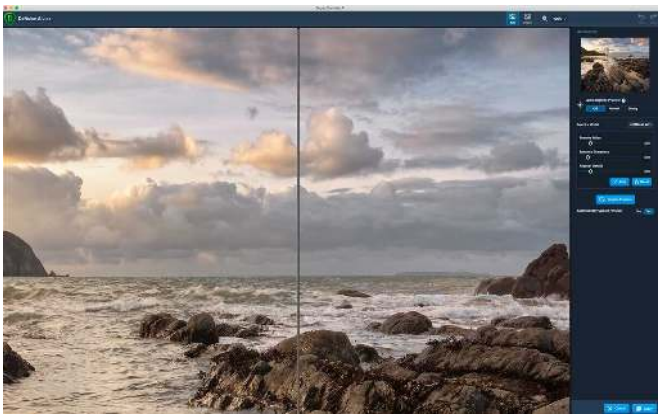


TOPAZ DENOISE

Topaz Denoise is one of the best Apps for removing noise I think. And it sharpens too. Adjust sliders to suit the image, and using it as a new layer means you have the flexibility to mask and remove areas if it has reduced detail.

NIK DEFINE 2

Define 2 is also exceptional for removing noise. In fact the whole Nik suite is worth having, including Sharpening. Now owned by DXO, they still offer the free version but it can be unstable. The paid suite is more stable but at a cost.



NIK COLOUR FX

Also a part of Nik Collection, Colour FX offers a huge selection of filters for such things as colour and tones. Used carefully they can be helpful, and no doubt you guessed the next bit, use as a Layer for more control. There are so many filter suites available, personally I tend to find a few that can be useful and the majority a little too much.

LUMINAR

Luminar offers plenty of standard filters and sliders to apply your own settings which can be saved as templates. There are a few that actually work very very well; the sunset filter adds a golden tone and Dehaze gives a great 'pop' to images. But please don't use the Sunrays filter or swap skies, it is always obvious and you are a photographer not a digital artist.

TECHNIQUES

LONG EXPOSURE PHOTOGRAPHY

Long Exposure Photography is the art of taking reality and twisting it. A definition I once saw and it is very much true. We use long exposures to flatten water creating tranquility, or emphasise rushing clouds creating movement and drama. It presents scenes in a way we just cannot see and therefore does twist reality. This section explores how long exposures are created, first using the traditional method, then using Live Time and also using the in-camera Live ND.

8-25mm Pro @ 8mm f7.1 ISO200 Exp 4m30s 10 Stop ND

TRADITIONAL TECHNIQUE

Shooting Long Exposures is surprising easy once you know the technique, with some simple gear and a few filters. Judging the effect is somewhat harder and comes from experience. Using ND filters which reduce the amount of light entering the camera, we expose for longer, thus creating the effect of blurred motion.
Long Exposures are different from ***slow shutter exposures*** although there is no specific definition. To me using anything under 5 seconds or so is a slow shutter, more and it starts to enter the realms of 'long-exposures'

Avoid clouds moving horizontally across the frame and look for clouds moving diagonally or straight towards you to create lead-ins. Sometimes clouds appear to have little movement, fix your eye on a part of the sky and count to judge how many seconds it will take to get any movement. The image above had a motionless sky but a very long exposure did produce some great movement.

Water depends on the conditions at the time, a very rough sea will be harder to flatten than a calm sea obviously. For a top down view like this from a cliff look for streaks in the water, or a bottom up image standing on a beach look for rocks with waves coming around them, a long exposure will make the rocks look like they are standing in mist.

The traditional technique is surprising easy, but Live Time gives us the ability to see the image 'develop' live and make judgement. The technique is simply using an ND filter, working out the exposure with a chart or an app, putting the camera in Bulb Mode and then exposing the image for the time calculated.

GEAR

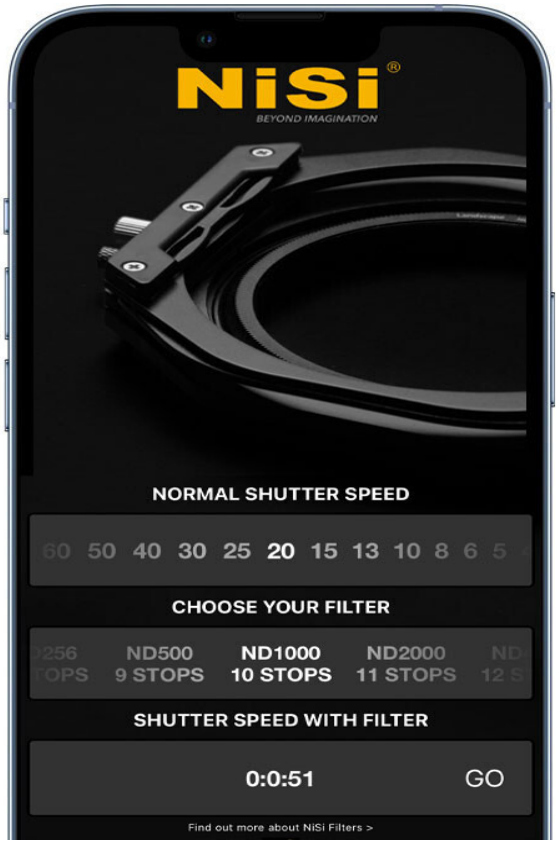
First you need a good steady tripod and a shutter release cable or a wireless one. I prefer wired because I am not reliant on batteries. You'll need ND filters to create the long exposure, I use NiSi and the most popular are ND8, ND64 and ND1000. ND's reduce the amount of light entering the lens and thus create a longer exposure. Different densities give options for different scenes and light. I would always say start with a 10 Stop.

A 6 stop is still useful because it can be combined with the in camera Live ND. I usually use a graduated filter for the sky too because that is the first to over-expose.
Conventions used can be confusing. The ND factor refers to how much light is reduced to calculate the exposure:

ND8 3 Stop (equiv to closing aperture 3 stops) 8x less light than without.
ND64 6 Stop (equiv. to closing aperture 6 stops) 64x less light than without.
ND1000 10 Stop (equip. to closing aperture 10 stops) 1000x less light!

Filters are available as circular screw in or as square slot in systems. Personally I prefer the 100mm slot in system, it allows the flexibility to add graduated filters too and a polariser and they are easier to remove if I need to adjust focus.
There is more information about the Nisi System on my website here: Nisi 100mm System.

THERE'S AN APP FOR THAT



Thankfully the days of having to work out exposure manually or with a chart are long gone, there are apps to do it for you. ***Photopills*** has a long exposure calculator and there are plenty of others too. ***Lee*** produce one limited to 3, 6 or 10 stops. I prefer the ***NiSi*** app because it's so simple and clear and it has a timer too.

Notice there are no settings for ***aperture*** or ***ISO***, they are irrelevant, all we need is the shutter speed. Take a note of your shutter speed **WITHOUT** the ND. If you have a polariser fitted take the reading with it on.

Now change the mode to BULB. Before you fit the ND set your focus either in Manual Focus or in Autofocus and then lock the focus (if you followed the setting up guide you mapped MF to a button). Not disabling AF means it will try to focus again when you fit the filter and it will hunt for focus.

Enter the shutter speed you noted, select the ND Factor and that's it. Here with a shutter speed of 1/20th with a 10 stop ND we get an exposure of 51 seconds. Using your cable release press the shutter button and lock it, tap GO on the App if you don't have an on screen camera timer and stop it when the time reaches 0. See how easy it is?

→ **TIP** Light can easily change over a long exposure so don't be too surprised if the image looks a little under or over exposed. Remember to check the Histogram when you preview the image and take another shot adjusting to suit. And remember to try and get the exposure over to the right a little without blowing the highlights. The more light you can give the exposure the better the end result will be.

OLYMPUS LIVE TIME

Luckily for us we have an even easier way to shoot Long Exposure images using Live Time which produces a 'preview' of the image during the exposure on the screen or EVF, allowing you to see exactly how it is progressing. The huge advantage of this is obviously you have the ability to stop the exposure when you feel it is right, you are not waiting until the end as in the traditional method. You also have a Histogram to use as a guide, and all that is needed is setting a few parameters.

EXAMPLE 1

8-25mm @8mm f6.3 ISO200 Exp 170s 10 Stop ND

Waiting for the light to soften.

Blackchurch Rock in North Devon on a bright sunny day. Getting there early is always a good idea to explore the location and investigate compositions. After checking the sunset position I already knew the rock would be in shadow at sunset as it sets behind the cliff , so I gathered a few images whilst light illuminated it which worked out great (see them on my Facebook page or Instagram). A long exposure on the water was my goal with a composition further back to accent the lead-in lines. The tide was incoming so I had to choose my position and work quickly.

The final image was taken with the 8-25mm with an aperture of f6.3. The Hyperfocal given for this is 0.68m using Photopills, and because it is 8mm I already know setting focus close is fine, it has such wide DoF. I switch to Live Time (Top Mode Dial>Bulb> Rotate Front Dial to Live Time) set the composition and set focus making sure it is then locked to MF. With the tripod locked firmly and the cable release fitted all I have to do now is set Live Time parameters.

EXAMPLE 2

8-25mm @10mm f7.1 ISO200 Exp 49s 10 Stop ND

Waiting for the sunlight at Spurn Point

Spurn Point on the East Coast of Yorkshire, a wonderfully quiet loctaion. It's a very good place for shooting long exposure minimal images using the wooden groynes. Empty skies are not usually what we desire but when the tones are right they can work very well. Focus was on the rear of the left rock giving me plenty of DoF. The only foreground I needed to considers was the rocks themselves. A 10 stop ND was used to lengthen the shutter and a 3 stop Medium Graduated ND to hold back the sky. Despite being only 49 seconds I used Live Time set on 4 seconds to make sure I have enough 'headroom'.

USING LIVE TIME

Using ***Live Time*** makes Long Exposure images even easier. The advantage is you are not set to a fixed exposure length and you can stop it when you feel it is correct. With the traditional method if it isn't correct adjustments are needed and the image retaken.
Set the top ***Mode Dial to Bulb (B)*** and turn the front dial to ***Live Time***. There are two other settings, ***Live Composite*** which is entirely different and allows images to be taken which add new light such as for car trails or star trails, and ***Live Bulb***. Live Bulb is the same as Live Time but requires the shutter to be pressed (via a cable obviously) and held for the duration of the shot, where in Live Time the shutter is pressed to start and pressed to stop.

A couple of things to check first in Menu
Camera 2>2.Other Shooting Functions>Bulb/Time/Comp Settings (in Live Time get to this quickly by pressing Menu twice). ***Bulb/Time Monitor*** is set to -7 brightness by default to save battery consumption but it is too dark, change it to 0. Also set time to the max 30mins.

Back in Live Time frame your composition, set and lock focus and set aperture, in fact everything as you would normally. Then press Menu to access the main ***Live Time Screen***. This is where we set the time that will help the length of the exposure and it is simple to understand.
Some simple multiplication is needed, and the camera shows a chart as a guide:

ISO L80up to 40024 Times. This means the camera will show up to 24 previews of the exposure at the interval we set, show in purple. Therefore 2×24=48. Set it to 4 seconds and 4×24=96 and so on. It can be set from 0.5s up to 60s. The number of previews depends on the ISO. As ISO increases the sensor is working harder and producing previews is additional strain causing heat. Heat produces noise so the preview availability is reduced. Olympus have sensibly reduced the number of previews at higher ISO because of sensor heat and the noise that is generated.

The calculation you make is NOT the exposure, it is simply the number of previews that will be available over the duration of time given by the calculation. If it was set at 4 seconds we have x24 previews that will be presented over 96 seconds every 4 seconds (4×24=96). After 96 seconds the camera is still exposing and will until you stop it, but you no longer see previews; you have no idea how the image will look. Therefore this is the 'ceiling' as I refer to it. All we have to do is make sure we set a 'ceiling' over the length of the exposure we need to give us some 'headroom'.

WE NEED A CEILING

How do you find the ceiling? You can use any of the ***Exposure Calculator Apps***. In Aperture Priority with no ND fitted note the *meter reading* and work it out.

Or guess. It isn't as hard as it sounds. In Aperture Priority take a reading with the filter fitted. If the shutter flashes ***'60'*** as a warning it is out of the ***exposure range*** (Olympus max shutter is 60s) and you therefore know it is over 60s.

If you get a reading of say 40 seconds and your'e using ISO 200 you will have 24 previews available. 2×24=48s is a little close to 40, so set 4 (x24=96s). This gives plenty of head-room, or a high enough ceiling not to run out of previews.

If the meter reading was over 60s, how much more will it be? Guess or use the App. Setting 8×24=192 which may or may not be enough. Running Live Time for around half the exposure will soon tell you if it seems about right, although working it out with the App will obviously be more accurate. It sounds complicated but you will soon be able to make educated guesses.

There is also a ***Histogram*** to show the exposure of the image, a timer, and a frame counter, 1 of 24, 2 of 24 etc. At ***24/24*** previews stop and the exposure continues *unless* you stop it.

→ **TIP** If you have guesses the settings and know it will be quite a long exposure, maybe a few minutes, you do not have to wait for all 24 previews. Watch the histogram, as the image builds on screen at 50% does it still look like you seriously underestimated it? Quit it and adjust settings. Similarly you've ran an exposure for a period of time, have only a few previews left and think it could have needed just a little more, 10, 20 seconds more, let it run and then stop it. Experience will help after a few attempts.

The point of Live Time is being able to see the exposure and stop it when it suits you, making it more accurate than the traditional way. However if an exposure is only a few seconds there is little point using Live Time. If the camera can meter through the filter your'e using and exposure is way under 60s you probably don't need to use Live Time. Also, do not set the seconds too low, you will run out of previews, and do not set them too high. If your exposure is around 60s and you set preview to 30s your'e hardly making benefit of the previews.

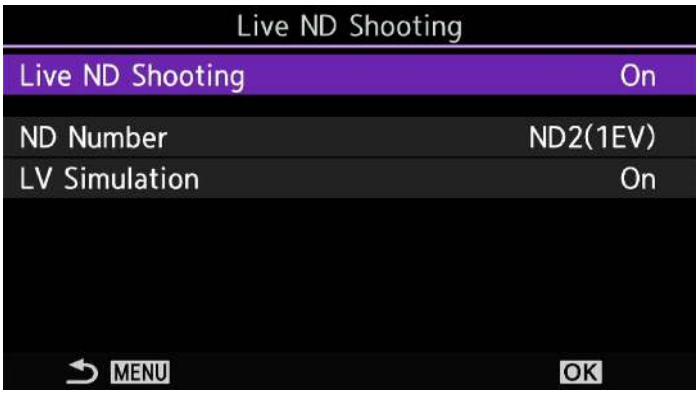
LIVE TIME IN ACTION

Once your image is set up and Live Time settings are set, press the shutter remote button. In Live Time you do not need to lock it, press to start and press to end the exposure. In Live Bulb you would need to lock the shutter release button. The rear screen or the EVF depending what you use (you cannot swap between them during the exposure) will show the image gradually building up, along with an ***elapsed timer*** and the ***number of previews elapsed***. All you have to do it end the exposure when it is properly exposed. A Histogram will also help to make a judgement.

LIVE ND

Exactly as the name suggests the OM-1 has Live ND's built in which is a fantastic feature, now expanded from 1- 6 stops over the OM-1 MK3 which was 1-5 stops. These are one of the Computational Modes and the camera produces a number of images based on the ND factor chosen and blends them together to produce a final RAW and/or Jpeg depending on your settings. Live ND is only available in Shutter Priority or Manual Modes and cannot be used in conjunction with other computational modes such as Live Time or High Res.

If you followed the Set Up Sections you may have mapped Live ND to a button and even saved a Custom Mode for it. Alternatively save it in My Menu. Mapping to a button makes it much more accessible which is why I have a Custom Mode set for M with Live ND mapped to AEL. In Manual we do not need AEL at all. Press the button and turn the front dial to change the ND factor, or access it from the menu. In the menu makes sure LV Simulation is On to see the effect of the ND.



Camera 2>Live ND Shooting> LV Simulation On

ND Factor Selection

When ***LV Simulation*** is active it turns the live view into almost slow motion to emulate the final image which is very useful. The downside is if you want to change composition because the screen lags so much. With Live ND applied to a button just switch it off, recompose and switch it on again. Live ND does work very well, it has an advantage of not needing external ND filters which you can even 'stack' to extend the available range, but there are a few constraints and things to note:

NOTE - Live ND is limited to Manual or Shutter Priority and it is limited to a longest shutter of 60 seconds and high ISO of 800, although you probably wouldn't want to use a high ISO anyway.

You can add additional external filters but bear in mind the longest shutter speed of 60s limit. It is useful to be able to use a ***physical 6 stop ND*** and extend it by using 1 or 2 stop Live ND, or a physical 3 stop ND and extend it.

I find it very useful for waterfalls when I only want to use 1 or two stops.

Understanding is key to learning, ***why is it limited to 60s?*** All cameras have a longest shutter they can meter and calculate exposure for, most are 30s, Olympus is 60s.

Over this limit and we would traditionally have to use Bulb, working out exposure ourselves, and since the camera cannot know the exposure it cannot calculate anything to emulate.

To access the traditional Bulb mode you would just switch Live Bulb off, however this cannot be combined with Live ND, nor can Live Time or High Res as these are also computational modes. Maybe one day, but right now it's like trying to mash a potato and chip it for fries at the same time.

ISO LOW is best avoided as dynamic range is reduced significantly both on the EM-1 Mk3 and the OM-1. LOW settings are computational and whilst sometimes useful to slow shutter speeds you may notice highlight blow out easier than in a native ISO such as 200.

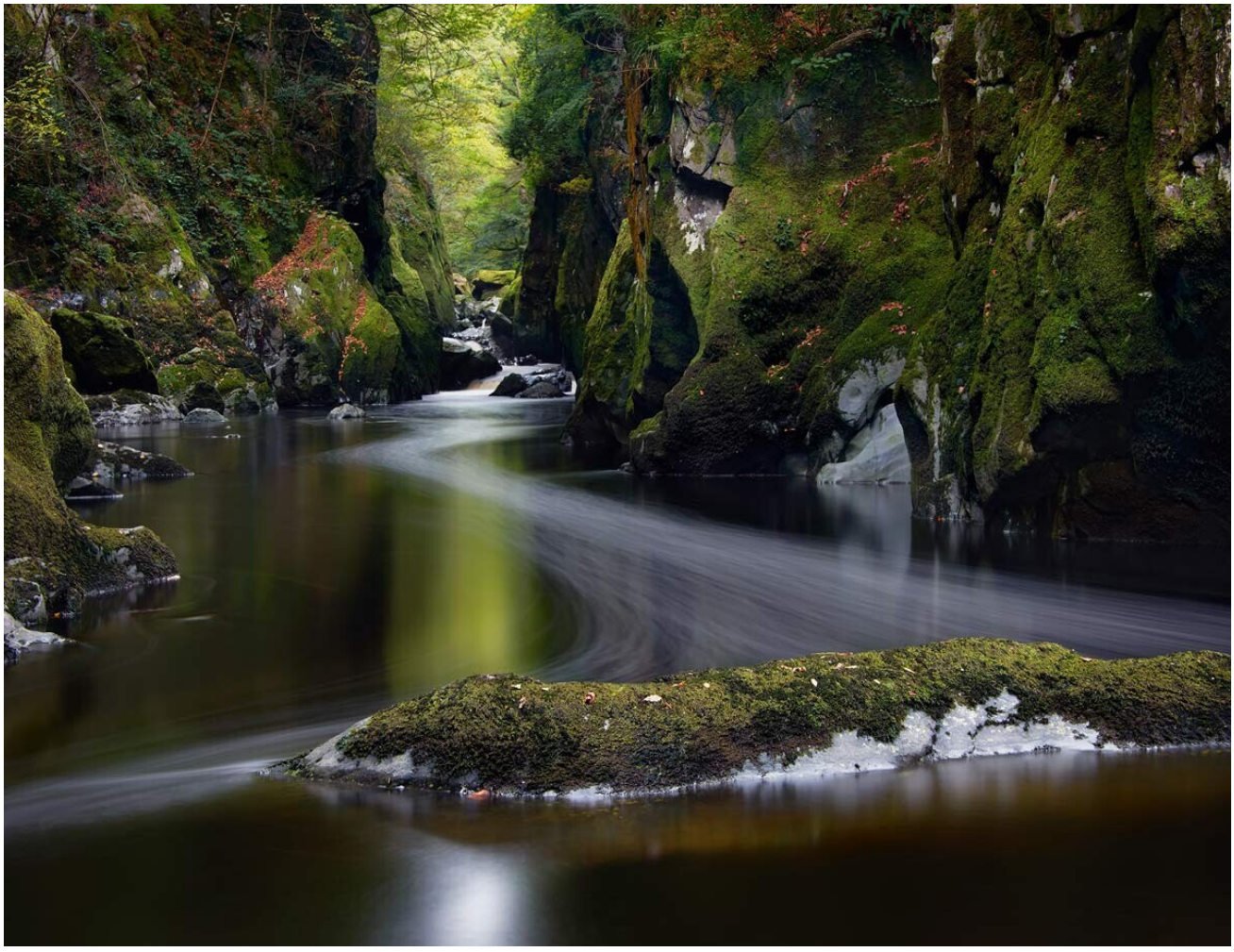
A waterfall for example at the bottom where the water enters the river can quickly over-expose. Be aware of this and be prepared to take another frame under-exposing a little to blend in if necessary.

Spurn Point on the East Coast of Yorkshire, a wonderfully quiet loctaion. It's a very good place for shooting long exposure minimal images using the wooden groynes. Empty skies are not usually what we desire but when the tones are right they can work very well. Focus was on the rear of the left rock giving me plenty of DoF. The only foreground I needed to considers was the rocks themselves. A 10 stop ND was used to lengthen the shutter and a 3 stop Medium Graduated ND to hold back the sky. Despite being only 49 seconds I used Live Time set on 4 seconds to make sure I have enough 'headroom'.

8-25mm Pro @8mm f7.1 ISO200 Exp 40s Live ND64

Top: Using Live ND to slow the sea movement down at Flamborough Head, East Yorkshire. **Right**: Surf at Spurn Point. Don't be afraid to try Live ND hand held, with Olympus Stabilisation it be be rewarding and liberating.

12-100mm Pro @12mm f6.3 ISO200 Exp 2s Live ND8



12-100 Pro @38mm f7.1 ISO200 Exp 40s Live ND16 (4 Stops)

POLARISERS

A ***Polariser*** is probably one of the most essential filters any landscape photographer really should have. By removing polarised light reflections are reduced and the natural saturation of colour is revealed. They also reduce light entering the lens by a factor of around ***1.5 stops*** which allows shutters to be slowed for creative uses.

Some scenes will require nothing more than a polariser to slow the shutter speed down. You do NOT have to remove a polariser when using an app to calculate exposure because the reading you took has already accounted for the reduction in light.
If you take a reading without a polariser and fit it along with an ND your calculation will be incorrect unless you factor in the polariser too.
You can determine a polariser's ND factor by taking meter readings with and without, however most long exposure calculators do not include 1/2 stops for example, meaning you'd have to compensate yourself. It's far easier just to take the reading with the polariser on.

BUACHAILLE ETIVE MOR

The classic waterfall in front of the 'Buckle'. Light was getting low as sunset approached and shutter speed is easily affected. My preference for waterfalls is around 1/3rd second, never more than 1 second. There are situations when all you will need is a polariser and nothing more. I like to soften the water flow but not turn it completely soft, although this can work well in some situations. See the black and white image below of the 'Wailing Widow' waterfall. Black and white and very soft water suited the mood I wanted to convey.

8-25 Pro @10mm f8 ISO200 Exp 1.3s Circular Polariser

7-14 Pro @ 7mm ISO200 f7.1 50s Exp 10 Stop ND

12-100 Pro @15mm f7.1 ISO200 230s Exp 10 stop ND

8-25mm Pro @8mm f7.1 ISO200 Exp 40s Live ND64

12-100mm Pro @12mm f6.3 ISO200 Exp 2s Live ND8

8-25 Pro @10mm f6.3 ISO200 1/6s Exp Live ND 2

12-100mm Pro @12mm f6.3 ISO200 Exp 2s Live ND8

12-100 Pro @17mm ISO200 f8 1/3s

BRACKETING

BRACKETING SCENES WITH HIGH DYNAMIC RANGE

Bracketing is the method of taking multiple exposures of a scene with high dynamic range to ensure all of the tonal range is captured in camera. A golden bright sunset or any scene with a wide range of brights and darks can present an issue. This section explores how we carry out bracketed images and what to do with them afterwards.

BRACKETING AND HDR

Bracketing (AE BKT or Auto Exposure Bracketing) is in essence ***HDR*** (High Dynamic Range). We have all seen those images which look more like a surrealist painting. Horrible right? In fact Olympus even has two HDR modes that will produce an HDR in camera.
What we are attempting to achieve is shooting images that are under and over exposed to capture all the information which are then merged together to give a natural looking image. We simply want to make sure highlights are not blown and shadows are not blocked in.
If the final image looks like an HDR it's a fail.

All cameras have a ***Dynamic Range*** they are capable of capturing, or the number of stops of light apart they can capture. The Olympus OM-1 & E-M1 MK3 have just over 12 stops whilst the Nikon D850 / Z7 have around 14.5. Quite a difference. That doesn't mean the Olympus isn't capable, we just need to be a little more careful. I also use a Z7 and still have to bracket with that sometimes.

Another way to control the dynamic range is to use ***Graduated ND Filters***, which bring down the brightness of skies. Using filters is very effective and does allow you to capture the scene in one frame giving considerable control.

It is very rewarding capturing an image in one in-camera. Varying densities, angles, even using another upside down to push light where you want are all techniques worth exploring. However the two are not mutually exclusive, use filters, use Bracketing, or do both. I will often use a filter and bracket for just part of a scene. Knowing how to approach a scene with different techniques means you have choices, and choices mastered means full control.

12-100mm Pro @ 18mm f8 5 images bracketed EV 1 Stop

This image taken in Inverpolly, Assynt had huge Dynamic Range as the God Rays broke through the clouds. I was actually concentrating on a different scene and had to run over with little time to prepare so I simply Bracketed it without a filter. There are numerous ways to Bracket, but which is best?

AE BRACKET OR HDR?

There are numerous ways to Bracket with your Olympus. We are simply taking usually 3 or 5 images ranging from 1 to 3 stops over and under exposed from the 'correct' metered exposure or 0 on the exposure scale. Which you use depends on the scene and the light. And of course by reading the Histogram.

Confusingly Olympus have two ways to Auto Bracket, located in two different menus and with different settings. It would make more sense for each to be amalgamated into one, why they are not is a puzzle.

Bracketing allows images to be taken at 1/3rd, 2/3rds or 1 stop up to 5 frames (or 2/3rds up to 7 frames) whilst ***HDR*** allows 3 to 5 frames at 2-3 stops apart. Confusing. That being the way it is, we need easy ways to access both.

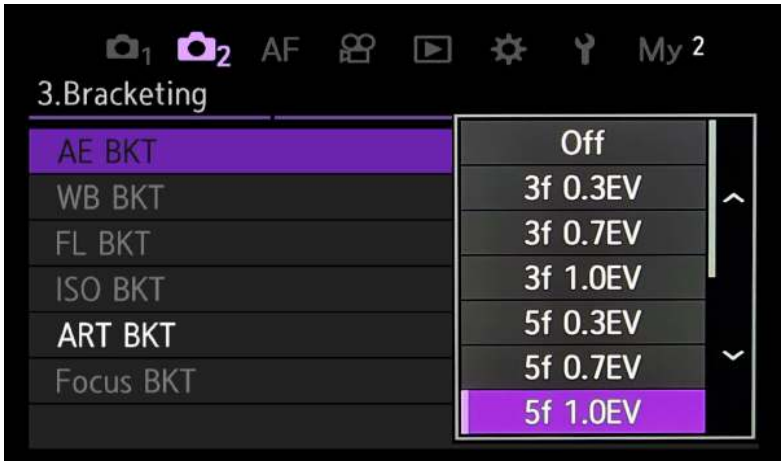
If you followed the Olympus Set-up Sections you will have a Custom Mode set which has Bracketing mapped to the top right +/- button, and HRD saved to AEL. This is then saved as a Custom Mode.

Please check the Buttons Section and Custom Mode Section. Select your chosen settings in the Menu of if you mapped to a button press/hold the button and turn the front dial to reveal the options.

Menu Camera 2> 1.Computational Modes>HDR

HDR Options; 3f, 5f, or 7f at 2EV – 3f or 5f at 3EV. Select your chosen settings.

The camera will will take the set number of images with one press of the shutter button.



Menu Camera2> 1.Computational Modes>AE BKT

Bracketing Options: 3f or 5f at 1/3, 2/3 or 1EV or 7f at 1/3 or 2/3 EV. Select your chosen settings. The camera takes the set number of images but you must keep your finger on the shutter button.

BRACKETING IN A, M OR S

All references I make to Bracketing are in ***Aperture Priority (A***) when Aperture is more important for Landscape photography than shutter speed.

The Aperture remains constant and the shutter speed will be varied for each frame to produce the ***EV*** value set for each frame, therefore if the image is f6.3 and the normal exposure is 1/40th second, a bracketed image 1 stop either side would be 1/20th, 1/40th and 1/80th second. But what if you want to use a different Mode?

Manual – Bracketing and HDR works the same as in A, the shutter speed is varied and the Aperture is constant. Shutter Priority – The shutter speed is constant and the Aperture will be varied one stop either side.
This could present a problem because Depth of Field could be affected. If for example your image has an object close in the foreground and you have done your best to maximise DoF, it could end up being slightly out, especially if you are bracketing 2 or 3 stops. For this reason we tend to avoid Shutter Priority for Bracketing Landscapes.

USE THE HISTOGRAM

Remember in each case to use the ***Histogram***. It will help you make judgements regarding how many frames you need to Bracket and how wide. Before enabling any settings move the exposure indicator on the Exposure Scale up or down, watch the Histogram and the feedback will guide you to how many stops EV you should consider. If a highlight is blown, move the exposure down and see how many stops EV is needed to bring the details back. Also having Shadows/Highlights warnings will also give an indication.

→ **TIP** It's more convenient having Bracketing and HRD mapped to a button to alter settings. Press and hold the corresponding button and turn the front dial to select the number of frames and the EV setting. The Om-1 now enables Sequential Drive Mode by default when Bracketing is enabled which is a big help, whereas the E-M1 MK3 didn't; it would have to be enabled and then saved it as a Custom Mode. HDR enables Sequential Drive Mode on both cameras.

AE BKT / HDR DIFFERENCES

The modus operandi of ***AE Bracketing*** and ***HRD*** is slightly different although they achieve the same thing. HDR has a wider range of frames and EV stops available, while ***Bracketing*** has a narrower range, both useful. There are other differences you should be aware of:

HDR will take your chosen number of frames with one press of the shutter using Sequential and Silent Shutter, and the screen has a small HRD indicator. There are no other indicators, it just does it without any fuss.

Bracketing (AE BKT) will take the chosen number of frames with a press and *hold* of the shutter using Sequential and the shutter mode you select, Silent or Anti-Shock. A 'BKT' indicator shows and the Exposure Scale illuminates with green markers to show the number of frames and the EV or number of stops apart.

Bracketing indicated on the Exposure Scale

As frames are taken the indicator illuminates again to show which frame has been taken and the next will flash. The 'flash' is useful, it is easy when having to press/hold the shutter to misjudge it and release before the final frame, if you see the indicator flashing it means you still have a frame to take.

This is the reason I prefer to avoid Silent Shutter, I can hear it so I have a good idea how many frames are taken. Keep the shutter pressed and it will continue to another set of bracketed images, but you will hear a pause between sets. It does become easy to judge when the sequence is complete after a few attempts.

ISO BRACKETING

We have seen Bracketing in ***Shutter Priority*** will alter the Aperture, so it is not ideal for Landscapes. There could be a scene, such as a waterfall, where you have carefully worked out the shutter speed you prefer for the flow of water. Using ***A*** and Bracketing will alter the shutter speed. All very confusing. A way around this is to use ***ISO Bracketing***.
The Aperture and shutter speed will remain constant, preserving your carefully worked out DoF and the shutter speed, ISO is varied for each shot. Therefore if your correct exposure ISO was 200, bracketing three images 1 stop apart would give three images at ISO 100, 200 and 400. The obvious issue here is increased noise, but as long as you are not shooting at a high ISO it is normally acceptable.
Normally if I do have to bracket for a waterfall it is because one particular area has blown highlights so it's just one area I want to under expose a little and then blend in afterwards.

HDR1 / HDR2

Both produce an in-camera merged HDI image as a Raw and/or Jpeg depending on your settings. HDR1 is a little more aggressive and both I think are a little too aggressive in how tones are mapped to produce the resulting image. Raw does give the opportunity to process further, however I never use these, I much prefer to have individual images and merge them in post for more control over the final image. It is worth exploring though to determine if they suit your own tastes.

WHICH MODE TO USE?

This depends as you would expect on the light and the scene. It is rare I need to Bracket over two stops either side, and even more so needing 2 stops over-exposure.
Exposure Compensation is available meaning you can always shift the bracketed sets along the Exposure Scale. Bracketing 5 frames 1 stop apart is equal to 3 frames 2 stops apart with HDR. Having 5 frames with a narrower exposure range means you can choose which images to use, you do not have to use all 5.
All things considered, I prefer to Bracket with HDR available just in case.

MANUAL BRACKETING

Auto Bracketing or ***HDR*** modes are not always needed. Bracketing manually is just as useful and is nothing more than using Exposure Compensation.

Manually Bracketing is simply using *Exposure Compensation* to take a frame which is under-exposed to protect highlights, or over-exposed to open darks and shadows. Differing from AE BKT / HDR, you have control over how many frames you shoot and what EV settings are used. Perhaps you just need one for highlights in a bright sky or on water.

It's wise to use a tripod and a shutter release cable. Most bracketed images you would use a tripod to ensure the images align correctly, but with a reasonable shutter speed and with Olympus Stabilisation being so good shooting hand held can be very successful. Most apps for blending images will find any slight misalignment and correct it.

On location-Elgol, Isle of Skye

EXPOSURE COMPENSATION

We have already visited Exposure Compensation (A Mode) in the Correct Metering section and saw how we can use it to control exposure. Bracketing by definition is simply taking two or more images of different exposures to combine, and therefore using Exposure Compensation to take 2 or more frames is Bracketing.

How you choose to approach it depends on what you are comfortable with; Aperture Priority and Exposure Compensation, or Manual and alter Shutter Speed. It is the same thing.

One point to bear in mind, I find that manually bracketing is a more leisurely approach allowing time to take a frame, inspect it, decide if another frame would be useful to blend or not.
But, remember movement; clouds rushing overhead or moving water are less likely to merge successfully over a full set of images. It is more suited to manually merging parts of a scene together. It's easy to merge a slightly under-exposed image of the sky manually into you main frame because it was a little too bright, and it will not show movement.
Merge a set of images together taken over a few seconds and your'e more likely to see artefacts where merging isn't quite right, even though auto merging apps have algorithms to reduce this.

MERGING IMAGES

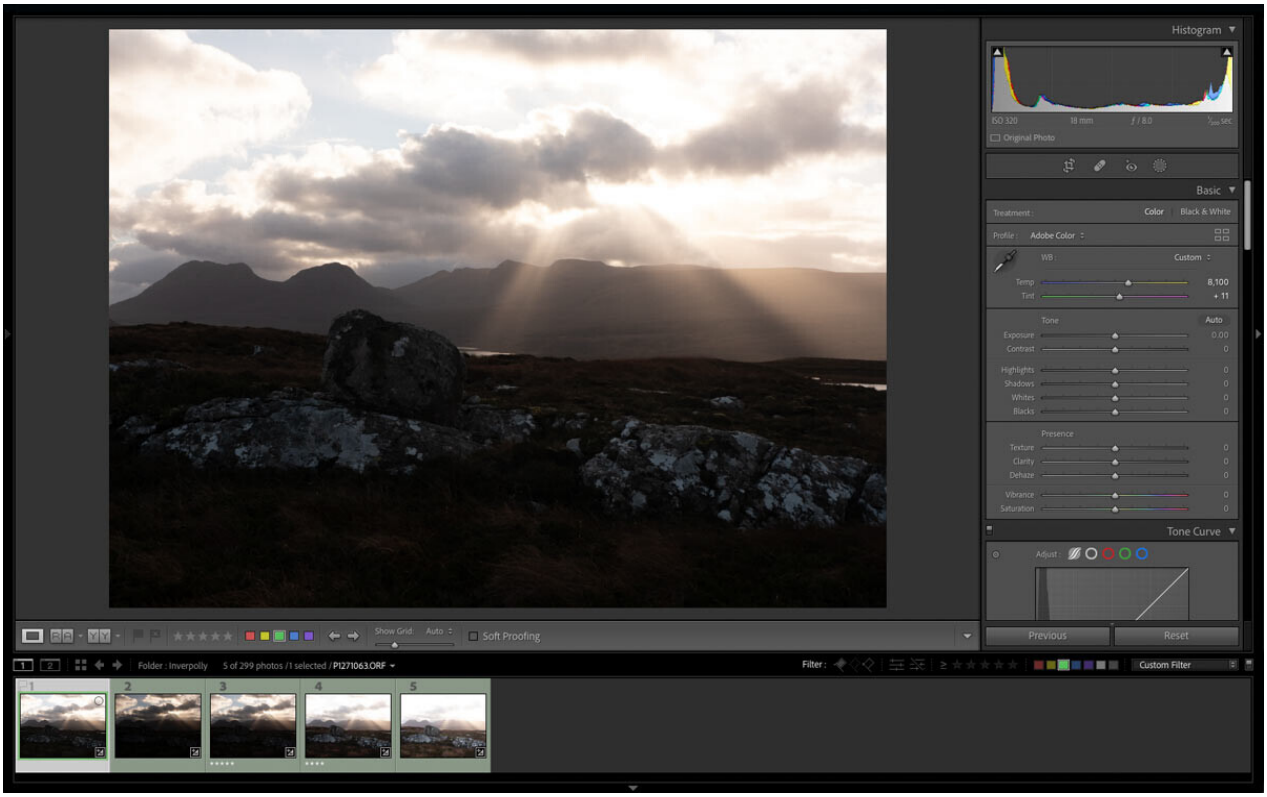
There are two ways to merge your bracketed images together, either automatically from a set, or taking one main frame and merging sections of another by hand. The approach you take depends on the scene and the light. We will look at both techniques and explore what each is best suited for.

1 – LIGHTROOM HDR

We will stay with the image at the start of this section of Inverpolly in Assynt for this because it had such a wide Dynamic Range, and we are going to use Lightroom.

There are many apps that will merge images which are dedicated to the task such as ***Aurora***, and many image processors too. We will look at some options in '***Workflow***' but here will will stay with Lightroom and Photoshop.
Do not process your images as it will be ignored in the new image created by LR.

STEP 1

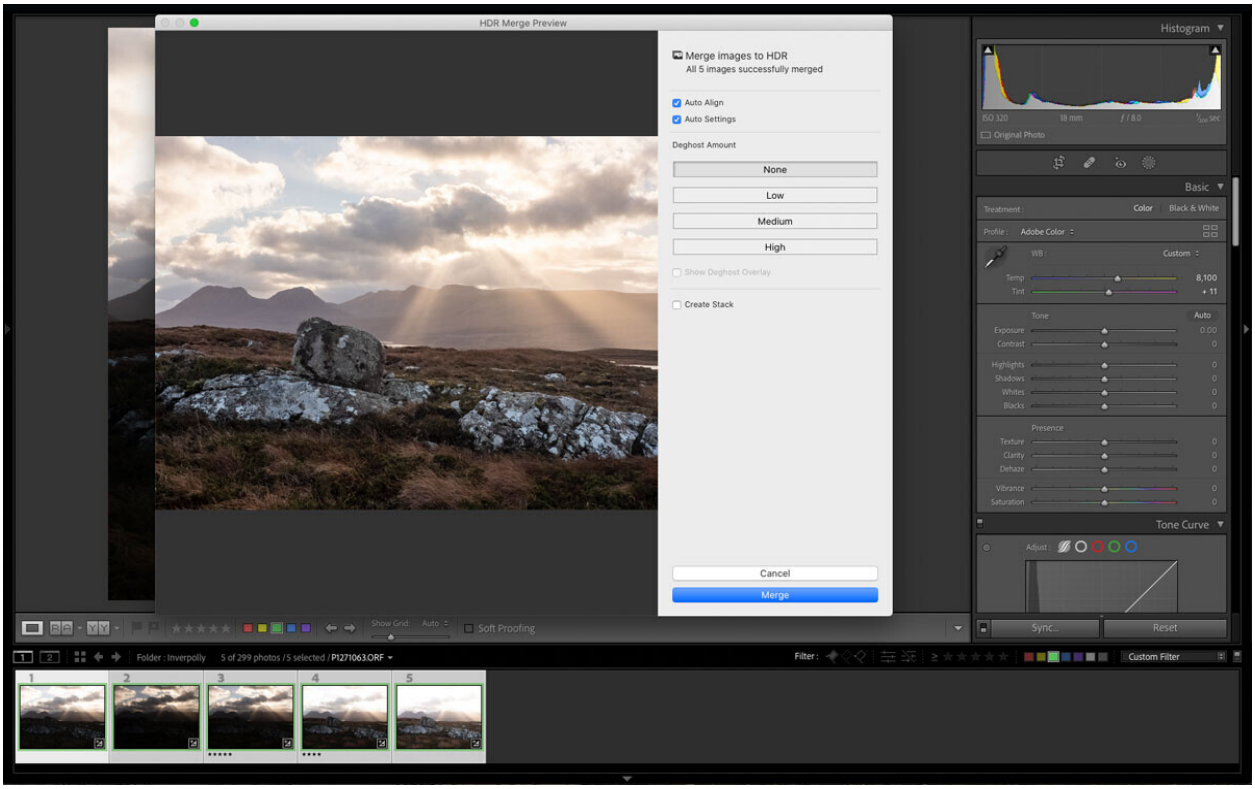


5 images each bracketed 1 stop EV

The 5 bracketed images shown in ***Lightroom Develop Module***. The first image is the base exposure or '0' EV. Notice the histogram, darks are to the left, brights to the right. They are both clipped and the mid tones are very flat, exactly as we can see in the image.
The five frames contain all the information to create one image with better dynamic range.

Colour coding the frames helps to filter them from frames you don't need, perhaps you created a Virtual Copy and played with settings, or you only want a selection of the frames. As frames cannot be selected individually for example 1, 3 and 5, colour code only the frames you want to sort them (*Keyboard '8' for Green*), then select the colour filter shown bottom right.

STEP 2



Merging the frames in Lightroom HDR Merge

With your frames selected *right click* and select ***Photo Merge>HDR***. A dialogue box will open with a few settings to select. ***Auto Align*** is best kept selected.
Deghost will find any movement in clouds etc and try to reduce the 'ghosting' which can look like camera shake. If there is no movement leave Deghost off.
Create Stack does as it says and creates a stack of the images.

Auto Settings needs a mention. It will apply auto processing just as in the normal *Develop Module* so I select it for a preview to see how well the images merge, but then deselect it. If selected the final merged image is brought into LR as a DNG (Raw) file with the auto develop settings applied and the sliders change accordingly. But it cannot be undone as it is a new image and there is no *History* state.

If you bring it into LR *without* Auto selected and then hit Auto afterwards you will have a History state and you can undo it. It will give a little more flexibility being able to hit Auto to see what LR thinks needs applying and being able to undo it, I usually prefer to apply my own settings.

STEP 3

Merged image now in LR as a DNG.

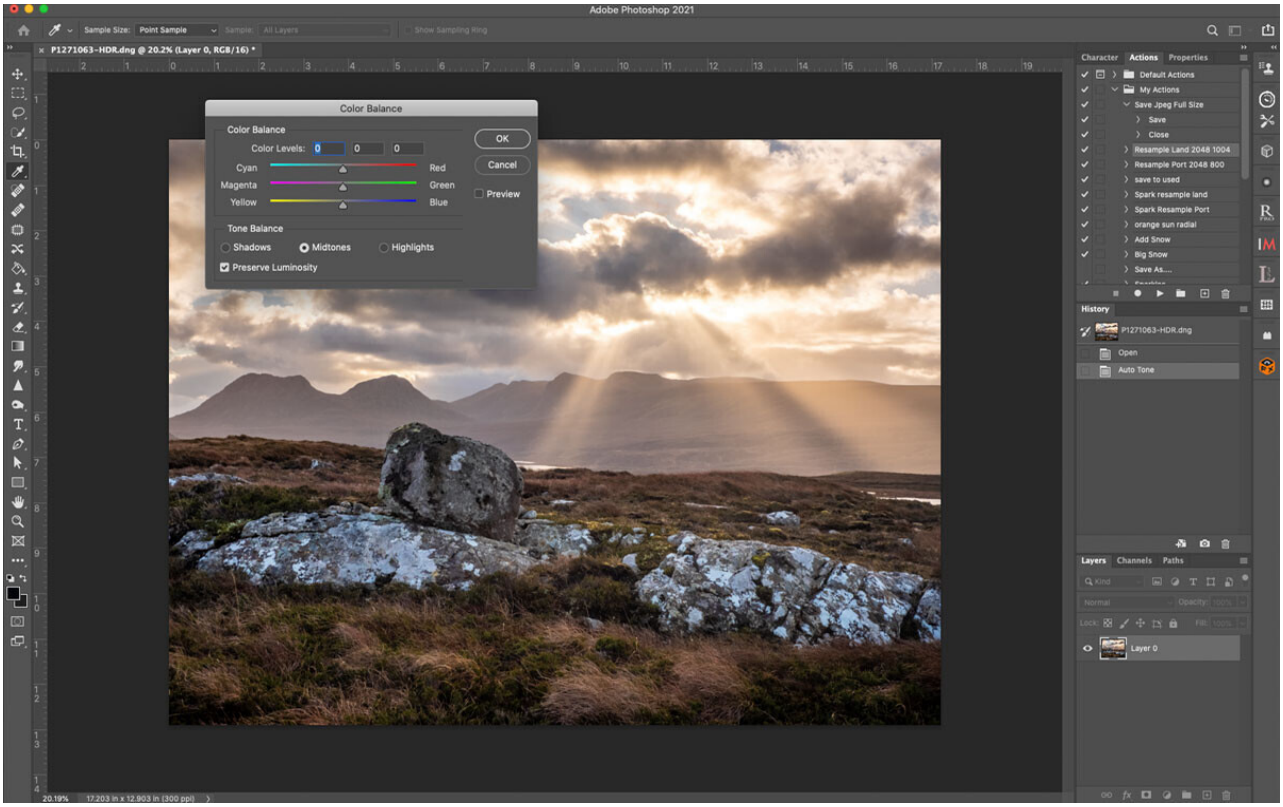
The merged image will be brought into LR as a new file and as a ***DNG Raw*** format for you to carry out your processing.

For this image Auto was pretty good with a few tweaks. I used a few Grads which are now located in LR's Masks panel. A ***Graduated Mask*** was used on the sky to *reduce clarity* to remove the clarity added in the main slider on the whole image.

An ***inverted Radial Mask*** was used as a very slight vignette (select the mask, click the dots at the side in the panel and select 'invert'.

Another small ***Radial Grad*** was used over the mountains on the left to warm the slight blue tone up. Finally another ***Radial Grad*** was added on the foreground which seemed a little dark; shadows, whites and clarity were adjusted to suit. I often use ***negative dehaze*** to brighten an area a little when I want it to stay soft.

STEP 4



Finishing off in Photoshop.

The last step is optional, finishing off in ***Photoshop***. I always finish off in Photoshop preferring some of the tools available such Colour Balance and Spot Removal to give a final tweak.

An advantage of using PS is ***Layers*** which LR will never have, the ability to use layers gives so much more added power to your processing.

I will leave my sharpening till last and also noise reduction using Topaz De-Noise; when used as a plug-in and a new layer it gives the ability to mask and brush out any areas that lost detail using De-Noise.

We will cover layers in more detail in 'Workflow' and in the Manual Blending below. From here I can save the image back to LR if I want to apply further processing, or save to my hard drive with a named title as a Tiff.

2 - MANUAL BLENDING

Using Photoshop to Manually Blend is very easy making it a simple task with great flexibility. Using Photoshop and Layers means you can target specific areas of an image and use frames taken for that purpose. Rather than letting LR blend a set of images you have the power to decide yourself what areas need to be blended, a whole sky or just a small area.

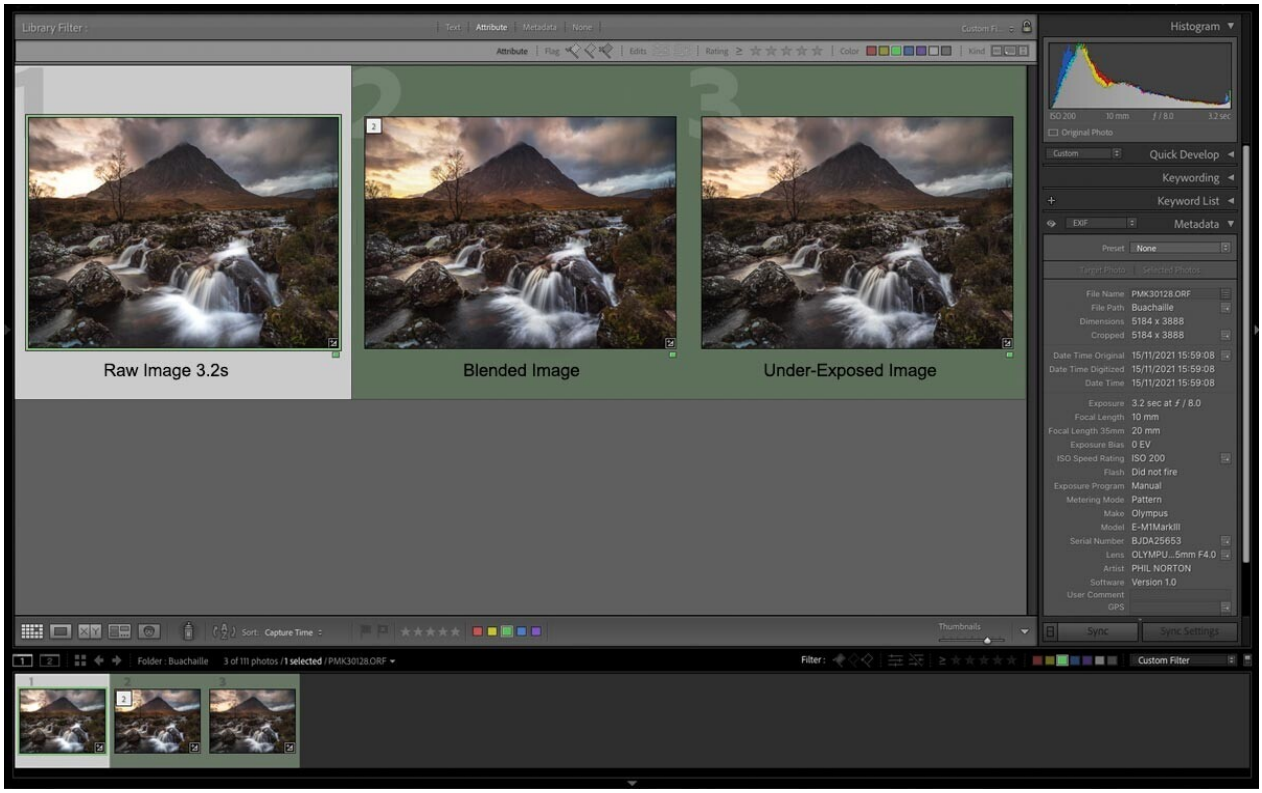
Blending images manually is taking two, or more images, placing them into one ***stacked*** document in Photoshop and using ***masks*** to blend them together.

PS is not the only application you can use, Affinity is probably the best alternative right now (different Apps are explored and explained in 'Workflow'). LR doesn't have layers, so we use Photoshop. Photoshop also has tools to Auto Blend images, however the point of doing it manually is the control it gives.

Using layers to stack images and blend one part into another is probably the *most powerful processing technique you can learn* and it will give you much more freedom to get scenes with full dynamic range.

And if you think about it, with the ability to show part of an image into another you can also use the same technique for focus stacking and removing people from your scene.

STEP 1



Two images prepared in LR for blending in PS, plus the final blended image.

This is not a full tutorial but will show you the basic steps which you can research and refine. I'm using the image of Buachaille Etive Mor which is a good example.

This image had a part of the sky on the right and some parts of the water a little over exposed. I dealt with those by taking another shot and blending those sections into the main image.

The three frames shown above are the main Raw image, the blended Tiff brought back into LR and an under-exposed Raw. The main difference with this technique is you will apply your processing to the frames in LR before sending them to PS. Start with the first image, copy and paste to the other and adjust to suit.

I used a ***Soft Graduated filter*** on this scene but because the mountain dominates the sky care is needed. I used a 2 stop which helps to bring down the sky without darkening the mountain. All the tones are good and note the histogram, the tones are towards the darks but they are evenly spread.

The original image is brighter, after making adjustments I want the tones to be darker. It was exposed a little more to the right because I can reduce tones to where I want, it is always better to reduce tones rather than brighten them. The brights on the sky and the water have 'clipped' meaning they have over exposed and they are still too bright after making adjustments. I was aware of that, hence the second frame.

On the second under-exposed frame there are two things of importance to note; it was actually darker so I have opened shadows more, frame 1 and 3 now look very similar, but frame 1 will have less noise because I have not opened shadows as much.

And note how soft the water is on frame 1 at 3.2s shutter speed with blown highlights at the bottom. F8 is too much for the DoF needed, but it was giving me the softness I wanted on the water in the background.
Frame 3 was under-exposed by a full stop, the highlights are recovered, and the water has more detail because the shutter speed was halved to 1.2s. Normally I would consider that still a little too slow but in this case I was happy with it. These two frames have all the information I want, I just have to combine them.

Now in LR, colour code the frames if you need to filter them as we did before, select both, right click and select Edit In> Open As layers In PS.

STEP 2

Masking the sky in PS.

Both your images will open in PS stacked into one document as ***Layers***. Make sure you have the ***Layers Panel*** and ***History Panel*** visible (*Window>Tick the panels you want to see and arrange them in the Dock on the right*). Make sure the main image is the top layer and the image you want to show into it, the under-exposed image is below it. If not just click on the layer thumbnail and *drag to re-order*. If you find the bottom layer is locked just double click to unlock it.

There are quite a few ways to create masks which is one reason people are so confused by PS. Making selections or using Luminosity Mask plugins are all possible, we are going to keep it simple and loose flowing by just using the *paint brush* and a few simple tools. Click the thumbnail of the top image in the Layers Panel just to make sure it is the active layer then on the top Menu click Select>Sky. PS will analyse the scene and then show the sky selected.

The colour of the paint used when filling masks matters because white will show, or keep the top layer, black will hide and show the image on the layer underneath. The default for PS is to use white on the top layer and we want to reverse it by using the ALT key. We need it black so that the sky is hidden to show the sky from the image underneath.

Press ***ALT*** then click the ***Mask*** icon at the bottom. A white mask is created and the top area of the sky is filled with black, hiding it and showing the under exposed image underneath.

STEP 3

Painting in the waterfall from the bottom layer.

Now click the ***Paint Brush***. Make sure the paint colour is set to black (two overlapping black and white squares bottom left, click the arrow to swap). The brush can be controlled, at the top you will see a Menu appear, make sure the brush is a soft brush, Hardness 0, with a low opacity of 40-50%. It is better to paint in stages rather than all at once.

To adjust the size use the ***keyboard shortcut*** Bracket Keys ([-]). Now make sure the mask is selected by clicking it, and just paint. I painted over the waterfall to bring in the water from the image underneath effectively replacing it. Swapping between black and white (to paint back in) paint colour, adjusting edge softness and even adjusting the opacity of the of the layer mask gives you lots of control.

Check the sky, have a look at the image and see how good the mask is. If you need to refine in use the brush on the mask layer and refine it with white to bring the top layer back or black to hide it. Vary softness etc but do not try to be too accurate. Finally ***Flatten*** all the layers (Layer>Flatten) into one and Save for it to go back into LR or save it to your hard drive.

Some scenes may need more accurate masking using selections or luminosity masks, but for scenes like this where we are only concerned with parts of the image this is the fastest and probably most flexible way to achieve it. And after a few attempts you will soon wonder why you didn't try it before.

→ **TIP LAYER AND MASK ORDERS**To show part of an image into another main image make sure the image you are showing *part of is under the main image*. Layer orders affect the mask you use and whether the mask is used to show or hide content. When a mask is added it is filled with white. White hides layers underneath, black shows layers underneath. Add a mask which is filled white by default, then select the Paint Brush and select black and paint ON THE MASK thumbnail, whatever you paint will hide the top image and show the image underneath.

To save more work it is always best to show an area into another. If your image is a sunset and you have another image of the sun under-exposed for the highlights you really don't want this as the top layer and then have to paint everything else around it to hide it. Remember that pressing Alt tells PS what to do depending on your layer order. It may be confusing at first but once you try it a few times you will find which order suits you most. One last tip-Don't replace skies with images from another scene even if PS does have a tool for this. It is cheating ;)

FOCUS BRACKETING

BRACKETING FOR NARROW DEPTH OF FIELD

Focus Bracketing is the method of taking multiple frames for one image to increase **Depth of Field**, usually for Macro photography when shooting extremely close with a Macro lens and a wide aperture. Of course it can be applied to Landscape photography too. This section explores the different techniques and when to consider using them. It is a complicated one so put the kettle on first

FOCUS BRACKETING / STACKING

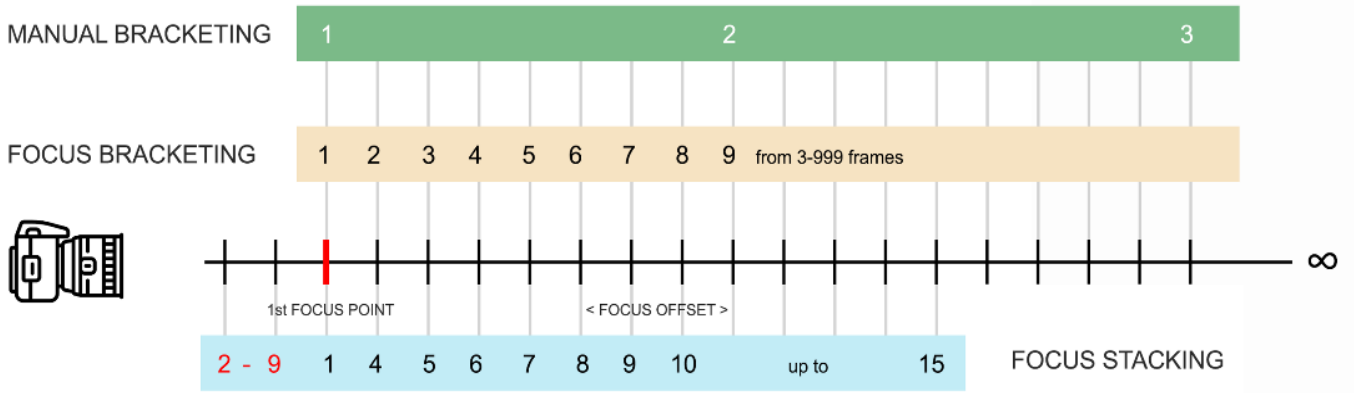
Olympus has two modes for Focus Bracketing both serving different purposes.

Focus Stacking (Menu Camera 2>1.Computational Modes) shoots a number of frames depending on the settings you choose and merges them into one image. The merged image is unfortunately just a Jpeg, but it can be useful and some people prefer to just use Jpeg. Stacking produces superb results and the Jpeg can suffice sometimes, it is largely personal choice.

Focus Bracketing (Menu Camera 2>3.Bracketing) on the other hand produces the images according to your settings and will save Raw images but not stacked into one and need stacking in afterwards.

Usually associated with Macro Photography, Focus Bracketing is a technique useful to Landscape Photography too. We saw in the Depth of Field Section how to use Hyperfocal Distances so you will know using a super wide lens DoF is rarely an issue.

Using longer focal lengths it is easy to run into problems. Thankfully bracketing for focus is easy enough to do, albeit more work. Check your Hyperfocal Distances, take a test shot and then decide what you need to do.



OLYMPUS FOCUS BRACKETING AND MANUAL BRACKETING 2-9 Number of frames in front of 1st Focus Point when Focus Stacking, depending on Focus Differential, Aperture and number of frames. Thanks to Kim Holst for providing the details.

DIFFERENT APPROACHES

MANUAL BRACKETING

Raw/Jpeg according to your settings. You choose number of frames and where to focus. 'Focus Offset' or distance between is your choice and the order of frames is under your control.
Require blending afterwards.

FOCUS BRACKETING

Raw/Jpeg according to your settings. User selected 3-999 frames, with Focus Offset user selected from 1-10. Frames will recede from the first focus point back into the scene.
Require blending afterwards

FOCUS STACKING

Raw/Jpeg* according to your settings. User selected 3-15 frames with Focus Offset user selected from 1-10. Two frames are captured in front of the 1st focus point in the order show. In-camera stacked image is Jpeg only* and is cropped by approx 10% but will have the original pixel dimensions. Raws are saved but not stacked.

WHICH MODE TO USE

You're already puzzled right? Too many options and it isn't clear which to use. Let's pause for thought and take a look at what these actually mean.

MANUAL BRACKETING

You've determined where to focus either by using Hyperfocal Distances or just taking a test frame, and you know sharpness front to back will be hard. You're using a wide lens but focussing on an object just cm's in front, or using a longer focal length so DoF is challenged. ***Manual Focus Bracketing*** means you decide how many frames you need, 2, 3 maybe more. You also decide where to focus for each one in the scene, you are choosing the 'Focus Offset' yourself.

For General Landscape images when I really have to bracket focus I tend to use this method more. As it will be no more than 2-3 images it is quick to do and 'Auto-Alignment' is not always necessary but do check it. Simply take a shot, move the focus point and take another, then blend in Photoshop.

FOCUS BRACKETING

Automated in-camera, set the number of frames and the Focus Offset, the camera will enter Continuous Silent and you're good to go. The challenge is to make sure the *Focus Offset* is correct, or how far apart the focus will shift to cover the foreground and background.

There are no set parameters for this, considering all the variables it would be impossible to have a chart expressing distances, offsets, frames, etc, so it's guesswork and experience.

It's useful for Landscape work when your viewpoint is low and a challenge to focus effectively, in which case I would set a wide number of frames, 8-10 and an offset of around 4. This should cover everything just in case and not all frames need to be used. As 999 frames can be set it's fairly obvious this is well suited to Macro

FOCUS STACKING

As above, set the frames, the Offset and the camera will take all the shots in *Continuous Silent*. There are some major differences to Focus Bracketing, the main being that the camera will produce an *in-camera stacked image* of all the frames but in Jpeg only and the available frames are reduced to 15 as a result (all the frames are saved according to your settings Raw and/or Jpeg).

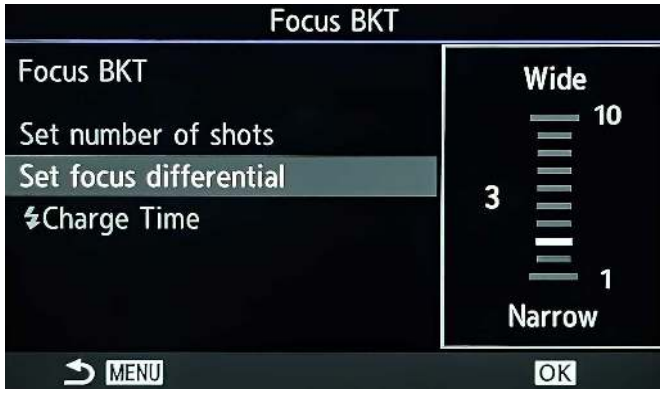
Focus Stacking

Menu Camera2> 1.Computational>Focus Stacking

Focus Bracketing

Menu Camera2> 3.Bracketing>Focus BKT

Each mode has an identical screen.



Enter each menu to set number of shots and differential.

Charge Time allows a delay if using a flash.

Remember to press 'OK' to set choices.

The image is also cropped slightly to around 90% of the original but is then resampled *back up to the original pixel size*, and at the time of shooting a frame will show as a guide for composition.

This is to account for '*Focus Breathing*' where as the focus is moved objects in the scene can change in size due to the field of view changing, which is more apparent in very close focus subjects such as Macro. It's the reason it is important to 'align' image sets in post before they are blended.

As ***Focus Stacking*** produces a stacked image the frame shows how the image will be cropped to remove the edges that will not align successfully. With Focus Bracketing there is no such guide frame so you need to be aware of it when composing your scene. Note that a number of images in total is limited to 15, with a number receding from the focus point and a number in front of the focus point with the second shot stepping forwards first.

The number of images in front of the focus point, 2-9, depends on the focus differential or how wide the 'steps' are, aperture and total frames set. Focus Stacking can be a little unpredictable, trial and error are needed and experience will guide you.

THE ANSWER

Is personal preference and what you feel comfortable with. However if you just need an extra frame or two for a Landscape the ***DIY Manual Bracketing*** gives control and freedom. ***Focus Bracketing*** is useful when you're in a tight spot and it's awkward getting to the screen/EVF to focus such as really low angle, and it is the mode I find best for macro.

Focus Stacking is great if you need a stacked Jpeg. The focus is moved forwards by a number of steps, which can be useful if you can focus into the scene enough to allow for it, but get it wrong and you risk focus ghosting. This is less of a problem when merging the Raws manually because the frames can simply be eliminated. Where I find In Camera Stacking most useful is for checking my *Focus Offset* to see if I'm close, or way off.

FOCUS BRACKETING MANUALLY

We will look at the simplest method first and the one that doesn't use any in camera features, just your own judgement, although you could of course use in-camera Focus Bracketing if you prefer to automate it. This example will use bracketing focus manually and also bending manually, both useful skills to understand.

THE SIMPLE WAY

The image below we saw in 'Depth of Field' and it is a good example of how Focus Bracketing can be invaluable. When using a longer lens DoF can be a real challenge especially when foreground interest is very close. But it need not be a difficult task if your'e prepared and aware of what needs to be done to collect the images for stacking.

Olympus Focus Bracketing is an incredible feature to use and I think best used for Macro when quite a large set of images are needed with very small shifts in focus.

For Landscape work you will probably only need 2 or 3 images and it's easy to do manually. The approach here is to keep things simple and we will also explore how to blend very simply too.

STEP 1 – THE SHOTS

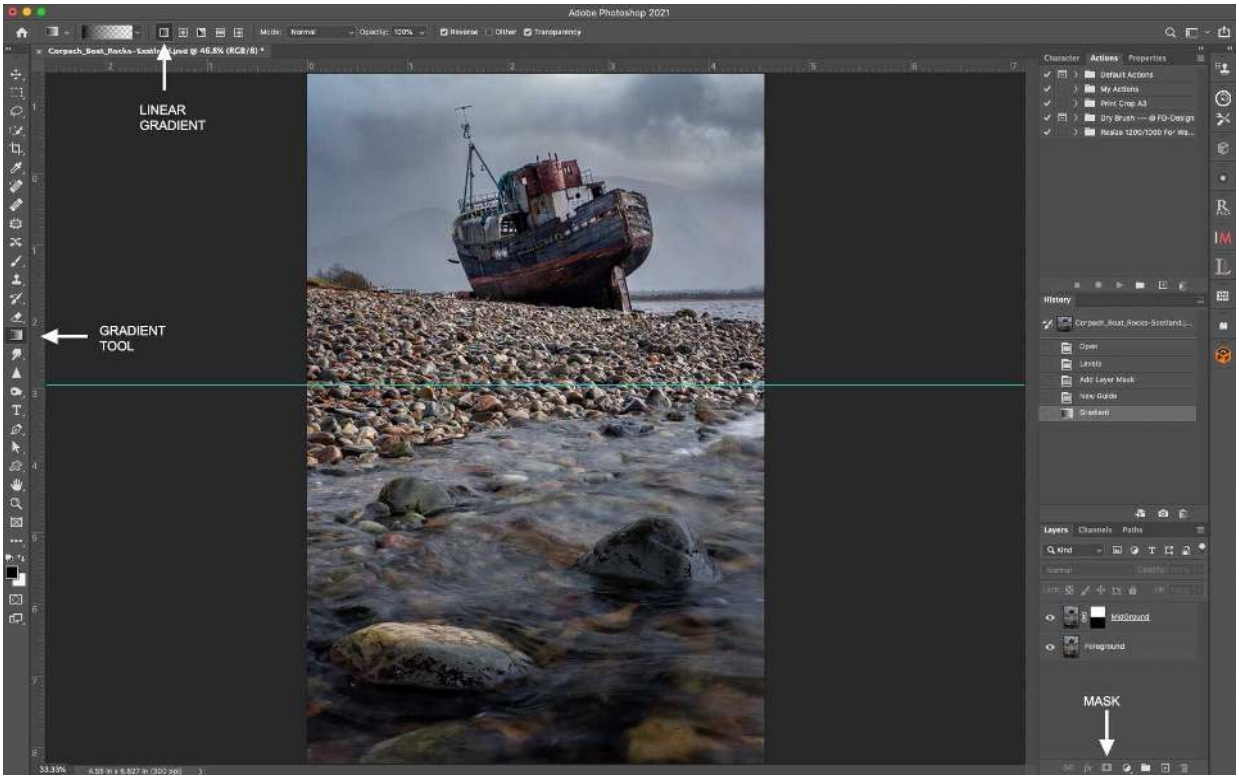
12-100 Pro @21mm ISO200 f8 1/15s Exp x2 shots

I knew using the 12-100mm Pro at 21mm and using a foreground so close to the lens DoF would be a challenge. Once you get to know DoF and your lenses you just know. Checking Photopills at time of writing this tells me that at f8 the *Hyperfocal Distance is 3.68m* with a closest focus from half that, *1.84m to Infinity*. So I was right just by instinct. The closest rock was around 80cm, too close. Being honest it doesn't take a genius to work that out, just a test shot would prove it.

I'd need to be using f20 to get the DoF, but then Diffraction will be an issue and detail will be soft, eliminating any gains in DoF. Given this information I know I have to focus stack. Staying with F8 because the shutter speed at 1/15th second gives good detail on the water I can take a shot with focus on the second rock.

DoF extended from the first rock to a few feet behind the water line, and forwards to include the first rock. Taking a second shot a few feet behind the water line will give me good DoF forwards to overlap the first image, and then all the way back to infinity. The background is soft therefore the only detail I need be concerned with is the far shore line. All of this was done in the matter of a minute or two, being so low water was splashing the lens and my footing was precarious on sloping slippery rocks. With the images complete I just have to merge them.

STEP 2 MANUAL BLENDING



We saw in 'Bracketing' how easy it is to blend images for exposure. We can use the same technique again the only difference being the images have a different focus.

Open both images from***LR as layers in PS***. I have the sharp foreground as the *first layer* and the sharp background as the *top layer*. If for any reason your images are not aligned properly go to *Edit>Auto Align* (click the 'eye' off and on to hide the layer and see if there is any noticeable shift in alignment). As your focal point changes the field of view can be affected so it is important to double check.

Clicking the ***Mask*** tool I could then just paint with the Paint Brush (with black) over the foreground to hide it and show the foreground from the image underneath. Instead to speed it up click the *image thumbnail* in the *Layers panel* (always make sure the layer you want to work on is selected by clicking it), make sure black is the foreground colour and click the ***Gradient Tool***.

A ***Gradient tool bar*** will show at the top, ensure *Linear Gradient* is select, then just click (hold down) and drag on the image. This is going to add a Gradient to the mask, as we know the DoF is around the water line click just behind it. I've shown a guide line where I start the graduation, all you need to do place it where you know there is overlap in the focus of the two layers.

With a Gradient added notice the top is white (visible) and the bottom is black (invisible) and the bottom layer is now showing through. Now just zoom in, check the focus and use the brush if you want to refine the mask. You have a great deal of control here by using the brush to pick out areas in *white (visible) or black (invisible)* in more complicated scenes. Now flatten the image *(Layer>Flatten)* and hit Save to save it back to LR for further work or save it to your hard drive with a new name.

CREATING SELECTIONS FOR MASKS

A general note about masks and creating selections.
Most of the time Focus Bracketing in Landscapes is straight forward and creating selections is easy enough. In PS simply using the Quick Selection Tool which acts as a brush (Under Lasso) is good enough. You can add/subtract in the tool bar, in Selection expand, contract and feather it, even invert it. These give you great control over simple masking.

These tools are expanded in Select>Select and Mask which allows you to show overlays, show a dark background, use more refined brush tools and have a little more control. The down side it can be time consuming and blending images for Landscapes should be quite straight forward with simple masks.

An App such as ***Topaz Masks*** is a dedicated app just for creating masks and separating elements of a scene, but at £99 it isn't cheap. In the image above if I really needed to separate the boat along with the railings, the mast and all the intricate detail to blend into another focus bracketed background image (there is actually a mountain there but it was obscured by cloud),

I would be better Auto Blending images rather than all the work of complex masks and selections.

PHOTOSHOP AUTO BLEND

Photoshop has it's own blending tool for merging images, ***Edit>Auto Blend***. It is very effective for blending focus bracketed image sets together that are a little more complex and beyond simple masking. It is also useful for Macro when larger sets of images are required to be blended. Just select the layered images then go to '***Stack Images'*** and select ***'Seamless Tones and Colours***'. PS will analyse the images, apply masks so that only the in-focus areas show and then create a top layer of the images flattened into one. Just in case something goes wrong copy the layers first by selecting them and dragging all down to the '+' icon, or just above the layers panel click 'Create New Document' to just make a copy of the whole document.

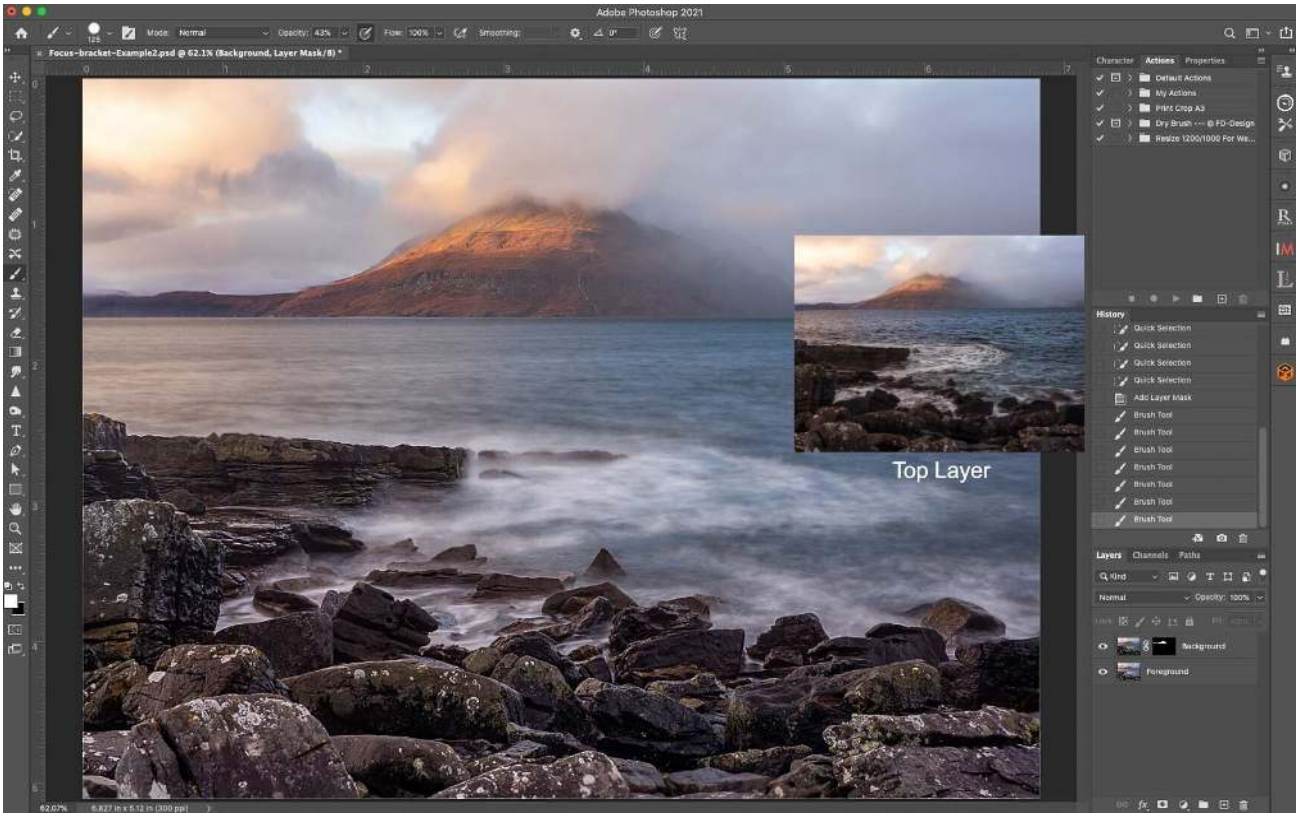
LUMINOSITY MASKS

There are of course even more ways to merge images and/or create masks. Luminosity Masks allow masks to be created from tones in an image, or to target parts of an image to apply processing such as reducing bright areas. There are many Apps that can be used as plugins to PS, ***Lumenzia*** and ***Raya Pro*** just to mention two. I find **Pro Panel** (by John Weatherby) to be one the most useful and use it as a plugin to PS. These are a little beyond the scope here, to find out more search online and watch a few tutorials to see how you can integrate Luminosity Masks.

ANOTHER SIMPLE EXAMPLE

The image below is a good example of blending two focus stacked images and keeping it very simple. Taken with the Olympus 12-100mm at 40mm, f7.1 and a shutter speed of 6 seconds in Elgol, Isle of Skye.

The background detail of the Black Cuillins was a little soft as the clouds started to part so another frame was taken with focus on the mountain. The In- Camera 5 stop ND was disabled and aperture opened up to f5.6, I didn't need a slow shutter DoF just for this so I maximised the settings for sharpness.



Opening both images in PS, I made a selection over the mountain with the ***Quick Selection*** brush on the background, ensured the foreground paint colour is white and then clicked ***Mask***. The background detail was showing with the rest of the frame hidden so it was blended into the main frame. Using the paint brush I could then go over the mask layer and make any refinements I need. Flatten and save and the job is done in less than a few minutes.

As a test I also tried ***Auto Blend***. The problem here was the water was much sharper in the second image (Top layer) and the auto blended image tried to include parts of the sharper water. The clouds were not an issue because they ware barely moving. The lesson here is be careful blending images with movement, whilst Auto Blending is often more appropriate for larger sets of images being able to do simple blending by hand will give more control.

FOCUS BRACKETING AUTOMATICALLY

In this example we will explore using the in-camera Focus Bracketing and also blending images automatically in Photoshop.

“SHROOMS”

I don’t do a great deal of Macro photography, but during Covid like many I was forced to try new things, and I discovered I had a fondness for Fungi macro photography. I started an ongoing series, ‘***Shrooms***’ which surprisingly combined well the technicalities of Macro and the freedom or artistic expression.

“Shrooms”-Various sets of Focus Stacked images

The premise behind the images is Fungi at twilight which glow as though communicating each other. By manipulating artificial light, and being creative with processing and colour balance I could produce images that look a little ethereal, whilst at the same time being very challenging and technical to capture. Let’s see how I went about an example and how the images were *focus bracketed*.

I don’t want to dwell on gear too much here (check the ‘***Gear’ Section***) but suffice to say you’d need a tripod that can go very low, centre columns that flip horizontally work well such as with *Vanguard* and *K&F*, a cable release, a high power LED torch and of course the Olympus 60mm f2.8 Macro lens. Also very useful is the *NiSi Macro Rail*.

Producing an image like this is complex. First you have to find them, decide if there is a composition including a good background, the bokeh is crucial or it just doesn't work and take some tests shots.
Test shots allow you to work out the number of images needed and the focus offset, and how well light will transmit through the fungi.

A non-illuminated set of focus stacked images is needed, then wait until twilight for them to light up. Not really. Additional sets of focus stacked images are needed with the Fungi illuminated by a torch, in this case I needed 2 sets.
Each set are then individually aligned and merged, and then the resulting images are stacked in Photoshop, aligned again just in case, and merged with masks manually for more control. Let's take a look step by step.

STEP 1 – THE SHOTS

In ***LR Library*** the images are colour coded (Yellow) so I can filter them. The first non-illuminated set I had to experiment with the number of images and the steps, in the end settling on 12 frames with a focus offset of 3 in Focus Bracketing. I did not want focus to extend from the front right to the back, preferring to have the back fungi a little out of focus to enhance the visual aesthetic and depth; I removed a few of the last frames from the set before merging.

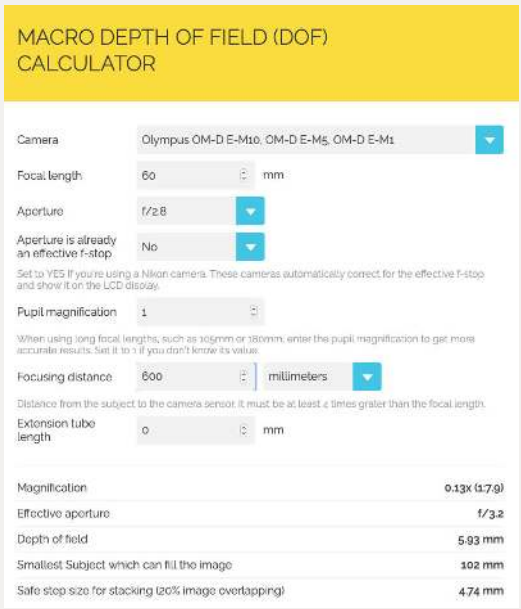
Numerous sets taken 60mm Macro f2.8 – deal set was Focus Offset 3

Focus Bracketing was used rather than Focus Stacking, I didn't need a stacked image and having focus shift in front can be difficult to predict on a scene like this; using the closest edge of the front fungi for the focus point would mean some elements in front of this would be in focus and in this case it isn't revenant. Furthermore I would have to focus further in, but where? Trial and error come into play, for this image Focus Bracketing allows the front edge to be used.

Additional illuminated sets with the same settings

The second and third sets were taken with the same settings but this time illuminated by a torch and under-exposed to protect the highlights. It can be difficult to get illumination right, I want it to be a soft glow, not a harsh light, and controlling it means varying the distance of the light, the angle and using some home made baffles. Using a ***Gorrilapod*** tripod with clamps and arms can help and I've since bought a set of ***Adaptalux Macro Lights*** which have small LED lights on arms.

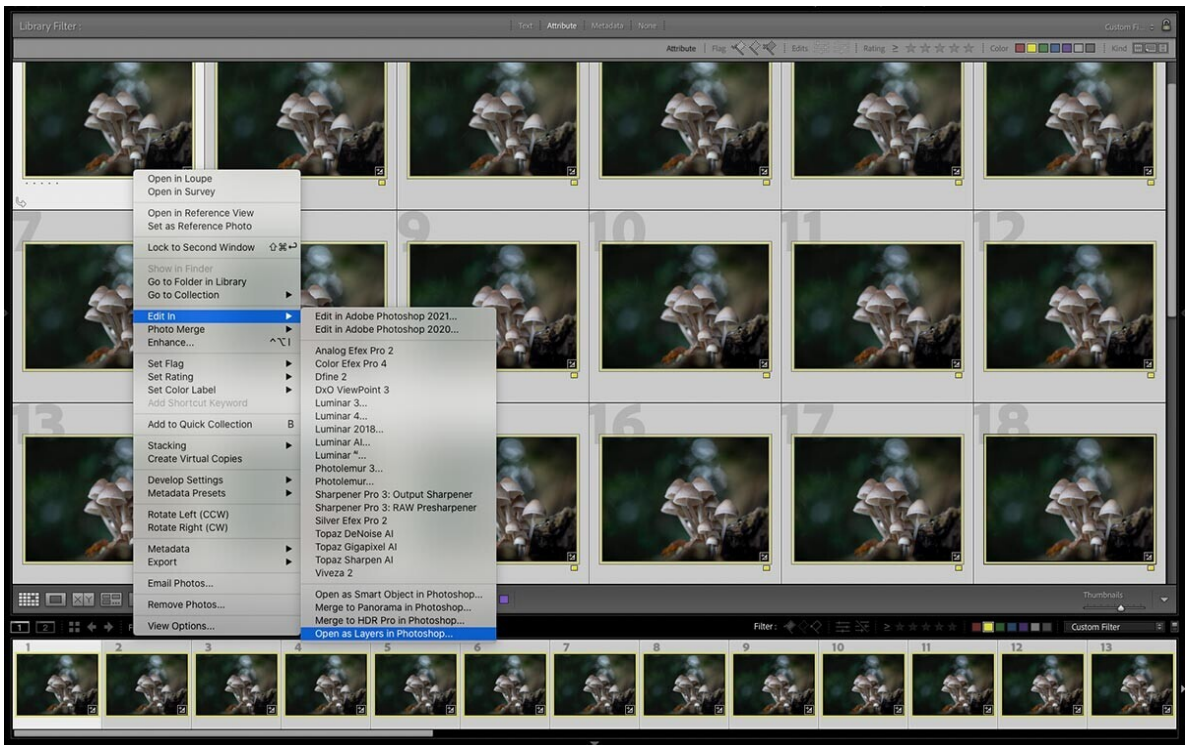
TIP→ FOCUS OFFSETS



There are no hard and fast rules regarding the number of frames required or the focus offset, it is largely trial and error.

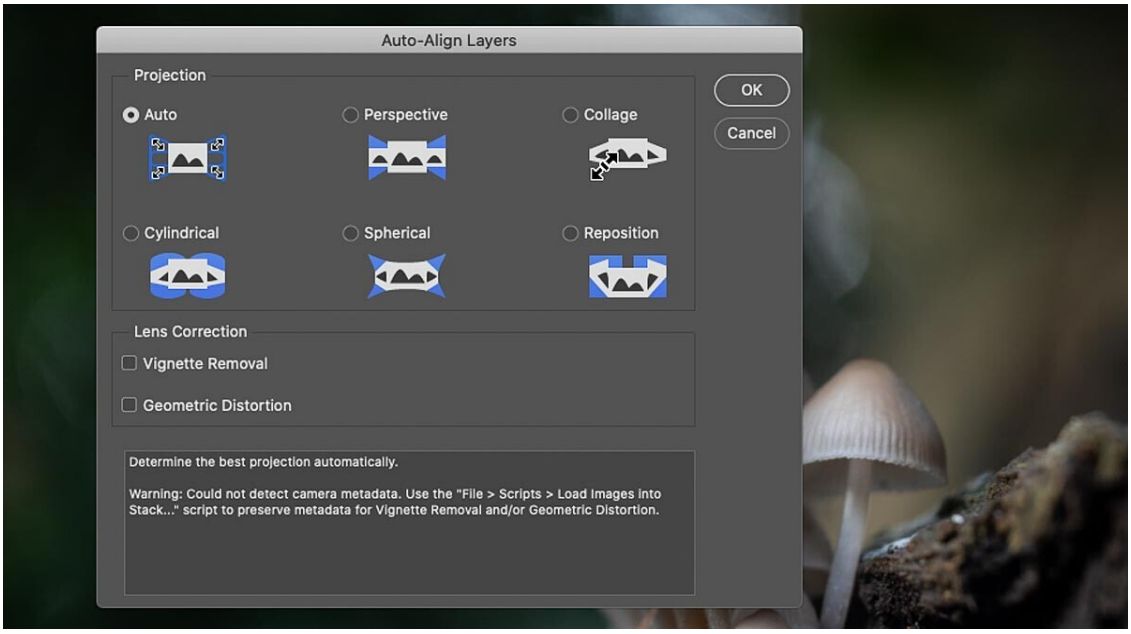
I normally start of with around 10-15 images with an offset of 2 and work it out from there. As there are so many factors involved I imagine producing a calculator to be very difficult. As the focus point changes the field of view changes and the true focal length of the lens changes, not so critical with landscape images but for Macro it is. Photopills have a Macro Calculator. The issue is it will show 'Safe Step Size' for stacking, but not Focus Offset which is what we use with Olympus. Safe Step Size is what you would move the camera using a Macro Rail. Still, it is useful to judge just how narrow the depth of field is and make more informed guess-timates.

STEP 2 – LAYER IN PHOTOSHOP



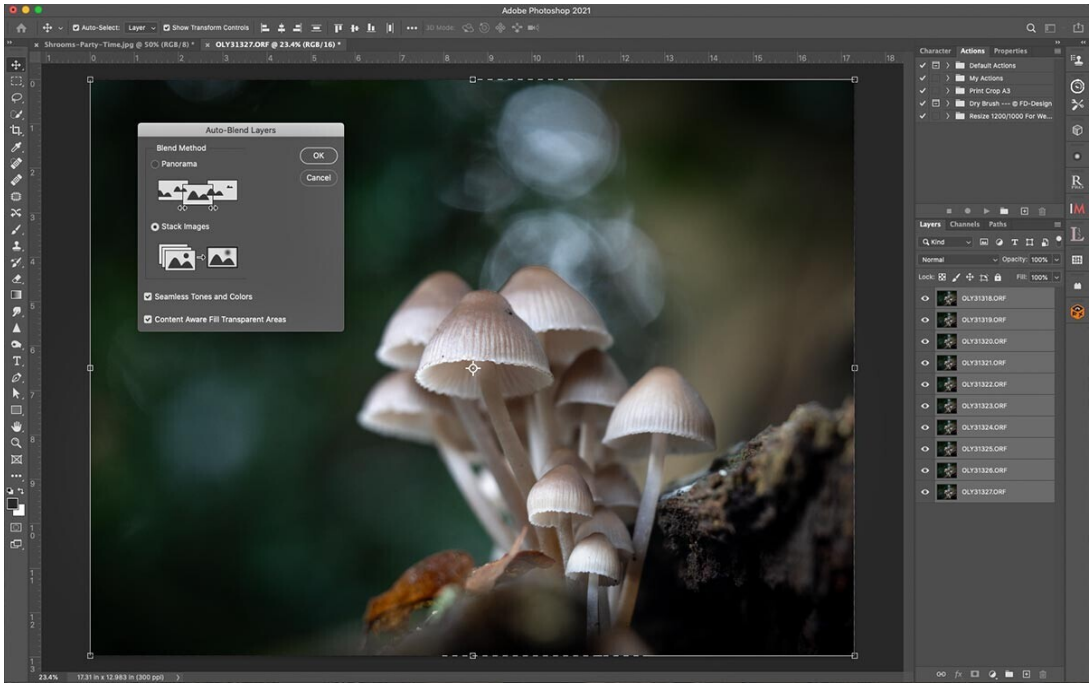
After inspecting the images apply your basic processing. Start with the fist image in ***Develop Module*** correcting White Balance, Exposure, Colour Saturation etc, then select the other images and *Synchronise* the settings. Then select the set, right click and go to ***Edit>Open as layers in Photoshop***.

STEP 3 – AUTO ALIGN



With all the layers selected in Photoshop go to ***Edit>Auto Align Layers*** and select Auto. Ignore Lens Correction since this is already applied in Lightroom with the Olympus' lens built in correction.

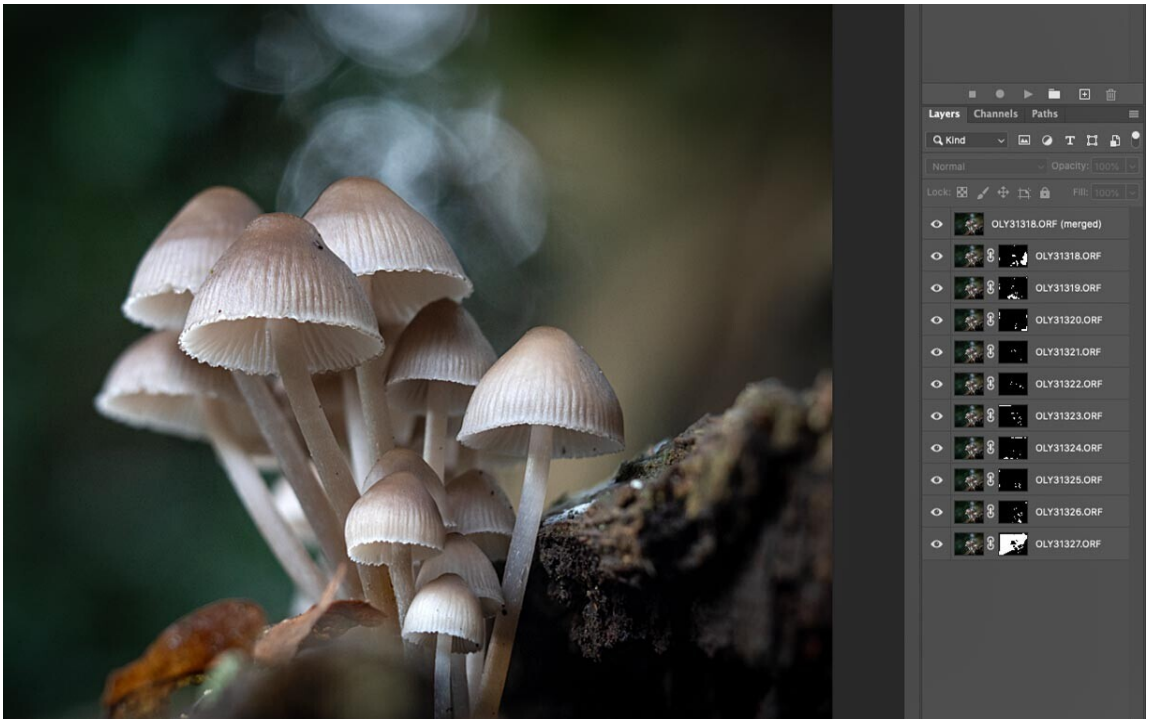
STEP 4 – AUTO BLEND



Note how there is a very slight mis-alignment on the top and left edges due to the focus point moving, or 'focus breathing'. We can crop this away but ignore it for now.

I would normally make a copy of all the layers at this stage (drag all layers to the + icon) or duplicate the document just in case. With all the layers again selected in Photoshop go to ***Edit>Auto Blend Layers*** and select ***Stack Images***. Note this is where you would also combine images for Panoramics.

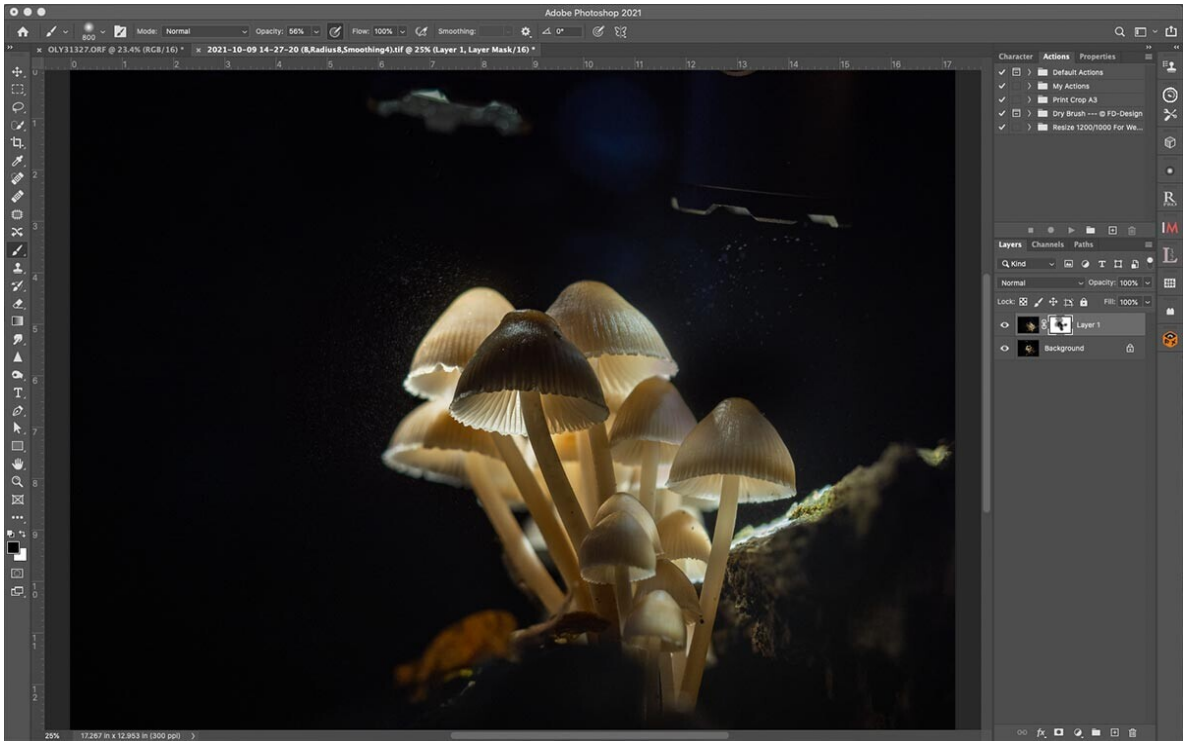
STEP 5 – FLATTEN & SAVE



Photoshop has done its thing, producing masks for all layers and creating a top layer with all the images merged. The focus front to back is just as I wanted, sharp and detailed at the front and soft at the back which adds visual depth rather than the whole group being sharp.

The centre rear fungi head has a dark edge, switch off the top layer, find the particular layer and carefully edit the mask with the paint brush to soften or remove it.
Flatten and save. Normally this is the last step, but carry on for this particular example.

STEP 6 – RINSE & REPEAT

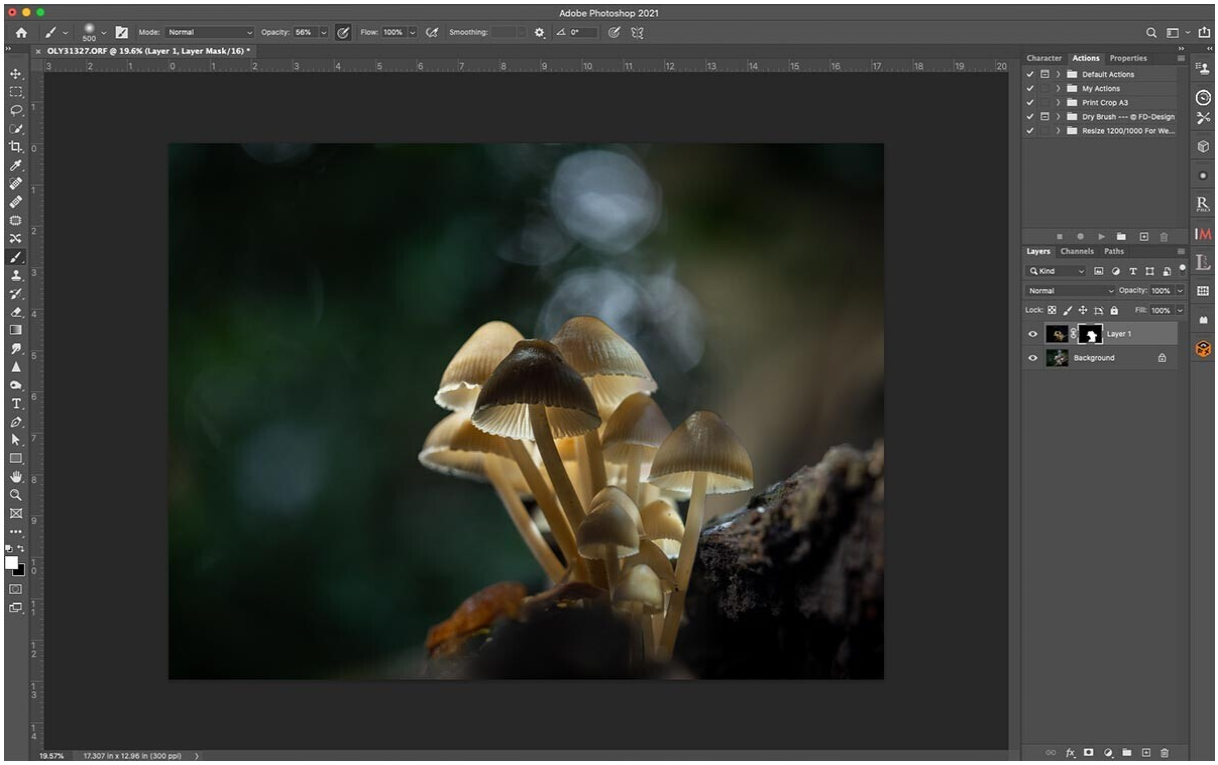


Now with the other sets of illuminated images do the same thing again from step 1-5. Yes, again.

There were two sets with the illumination in different positions, so each set is Auto Aligned and Auto Blended. Both are stacked together, a mask created with the Quick Selection Brush and then refined using the Paint Brush alternating between black and white paint.

All I am doing here is blending in some of the light into the front fungi from the second image. Then when happy flatten it. (I have left the torches visible for your reference).

STEP 7 – COMBINE ALL



We now need to combine the illuminated and non illumined merged images by placing each one into one layered document.

A quick way to layer a few images in PS. Open the images separately, they will be in their own tabs at the top. *Click/hold* the tab and drag it out so it is a *floating window*, and position it so you can see the other image under it. Click the dragged image to make sure it is active, then click on the layer thumbnail, *click/hold* and at the same time *press/hold Alt*. Drag the thumb onto the main image of the other document. It will now appear as another layer over the second image. Pressing *Alt* tells PS to align the layer exactly over the other layer.

Now with *first focus bracketed and merged image (non-illuminated)* and the *second (illuminated) image* (which was two sets of images merged together) open in one document as layers in Photoshop, make sure the illuminated set is the top later.

Use the *Quick Selection* tool to select the fungi refining it as best you can and then hit the ***Mask*** icon. The background will now show as if by magic. You can now get creative using the paint brush tool to soften areas of light, and start using Photoshop to alter colour, levels etc. You could also bring it back into LR to do further processing if you prefer.

TIP→ FOCUS GHOSTING

A blurred edge to part of the image, almost as though there has been some camera movement usually indicated that the Focus Offset is too large, or that there are too many images in the set and Photoshop has not been able to merge them. This is the first and last image from the set to show the result of Ghosting. It may not be apparent until the images are merged in which case there is little that can be done other than reduce the Offset next time. If there are too many images try removing the last few frames. The advantage of Focus Stacking is you will see the images merged and have a better indication of the results of your settings, but remember the first frames are forwards of your focus point.

EXAMPLES

60mm Macro @ f2.8 Focus Stacked 2 Sets Merged

60mm Macro @ f2.8 Focus Bracketed 4 Sets Merged

60mm Macro @ f2.8 Focus Bracketed 3 Sets Merged

60mm Macro @ f2.8 Focus Stacked 2 Sets Merged

60mm Macro @ f2.8 Focus Bracketed 1 Set

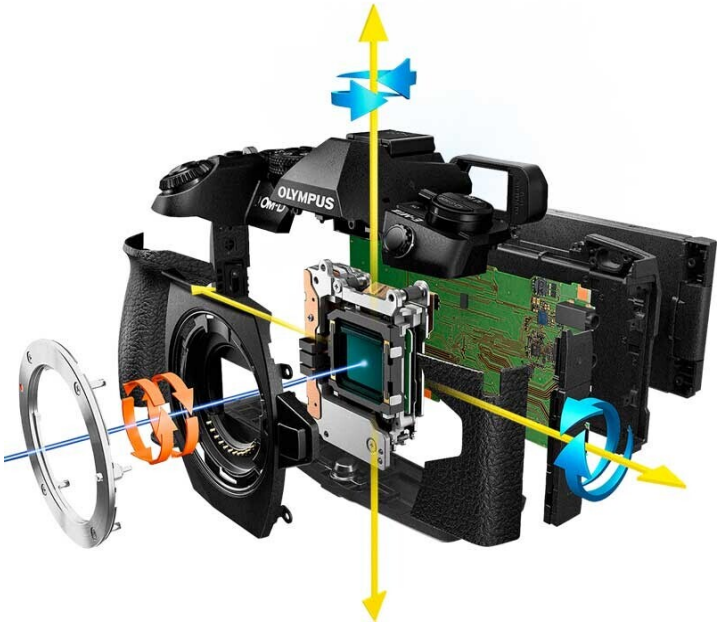
Merged

HI RES MODE

USING OLYMPUS HIGH RES MODE

Olympus High Res Mode was first introduced back in 2015 in the E-M5 MK2 and shortly after to the E-M1 Mk2. Since then it has gone through a number of iterations and improvements to the point now with the OM-1 that we have a High Res 80mp Tripod Mode and 50mp Hand Held Mode that work incredibly well. With the increased processing power of the OM-1 High Res has been improved tremendously making it more useable.

WHAT IS HIGH RES MODE?



Olympus (now OM-Systems of course) have always led the field with class leading in-body *Image Stabilisation*. A sophisticated mechanism moves the sensor to account for movement thus eliminating it. This same mechanism moves the sensor in High Res Modes to create Pixel Shift.

The sensor is not made of pixels, it is actually photosites which in the case of Olympus sensors are Bayer Matrix. The actual science behind this gets complicated, all we need to know is that the sensor is moved in minute increments of one photosite per shot and for the next is moved horizontally or vertically.
The sensor is moved 4 times clockwise and then repeated and each time it moves a true RGB (red, green, blue) signal is captured per photosite. In normal resolution one signal is captured, R,G or B and the resulting image is interpolated by guessing the other signals from adjacent photosites, which also accounts for slightly less detail.

In ***80mp Mode 8 images are captured***, ***12 for 50mp***. These are then combined into one Raw and/or Jpeg image which have better colour accuracy and higher detail. As an additional benefit as the images are combined it will also ***reduce noise*** and ***increase dynamic range***, so we end up with a file that has better colour, more detail and less noise.

Whilst Hi Res Mode is still very useable on the E-M1 MK3 it has been improved dramatically in the OM-1 with processing taking as little as 6 seconds.

RESOLUTION OPTIONS

We have various sizes available to use as Jpeg only or Jpeg + Raw:

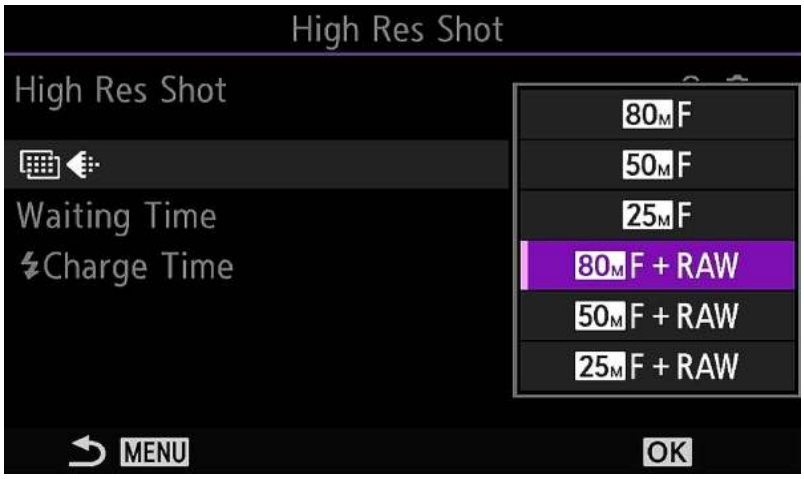
Raw 80mp Tripod Mode

50pm Hand Held Mode

Jpeg 80mp Fine, 50mp Fine 25mp Fine
(80mp 10360x7776px, 50mp 8160x6120px, 25mp 5760x4320px

Tripod Mode:
Jpeg 80F, 50F and 25F available

Hand Held Mode:
50F and 25F available



*Note that the Jpeg file resolution is independent of the Raw file resolution. For instance shooting High Res in Tripod Mode 25F + Raw, the Raw will still be 80mp, it is just the Jpeg that will be 25mp.

THE MYSTERIOUS .ORI FILE

Along with the Raw and/or Jpeg files recorded you'll also see a strange .ori file. This is actually a standard resolution Raw image and is the first frame from the sequence. Previous versions suffered when there was movement in a scene such as water, grass or trees and could result in artefacts resembling a cross hatch pattern. The computational process of High Res would look for this and try to replace artefacts by merging in problem areas from the original file quite, but not always successfully.

Artefacts are largely no longer an issue now although movement still is. But, as multiple images are being combined movement will always be blurred; instead of trying to avoid it I go with it to express the actual scene, blurred grass will express a windy day and moving water will appear as though an ND has been used.

→ **TIP** ***Olympus Workspace*** and ***DXO*** will recognise the ORI file but Lightroom will not. Change the extension from ***.ori to .orf*** and import into your processor and it will be compatible. Rename the file too to avoid conflict, if your Hi Res Raw file is 12345.orf change the Ori to 12345B.orf, 12345original.orf, or anything that makes sense to you.

ACCESSING HIGH RES

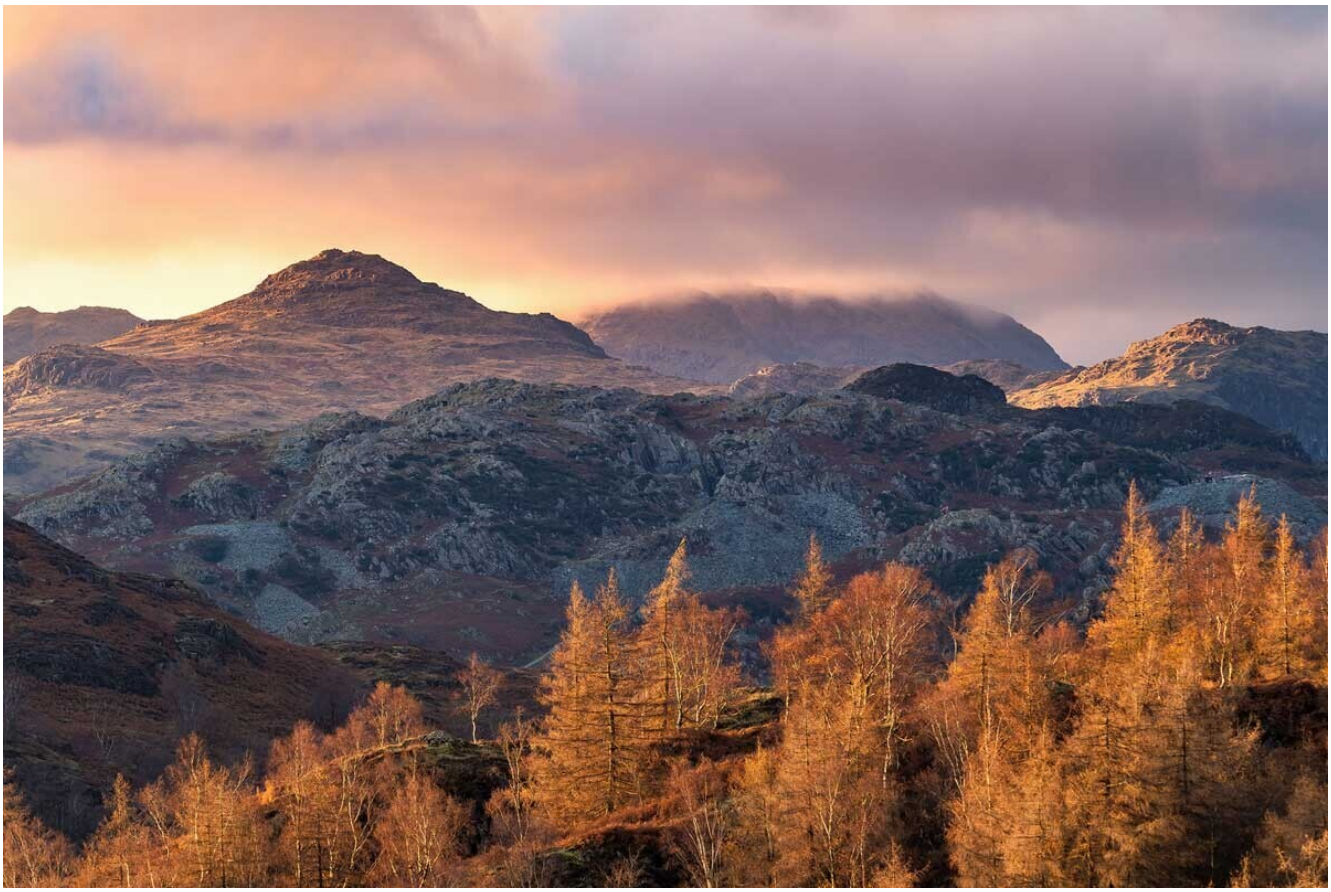
We now have a dedicated button on the OM-1 for High Res which is really useful to enable or disable it. To quickly switch between ***Tripod*** and ***Hand Held Mode*** press/hold the button and turn the front dial.

To change quality settings you can use the Menu (save it to ***My Menu***) or on the Super Control Panel select it and the quality settings will show, with the settings available to change for the mode shown.

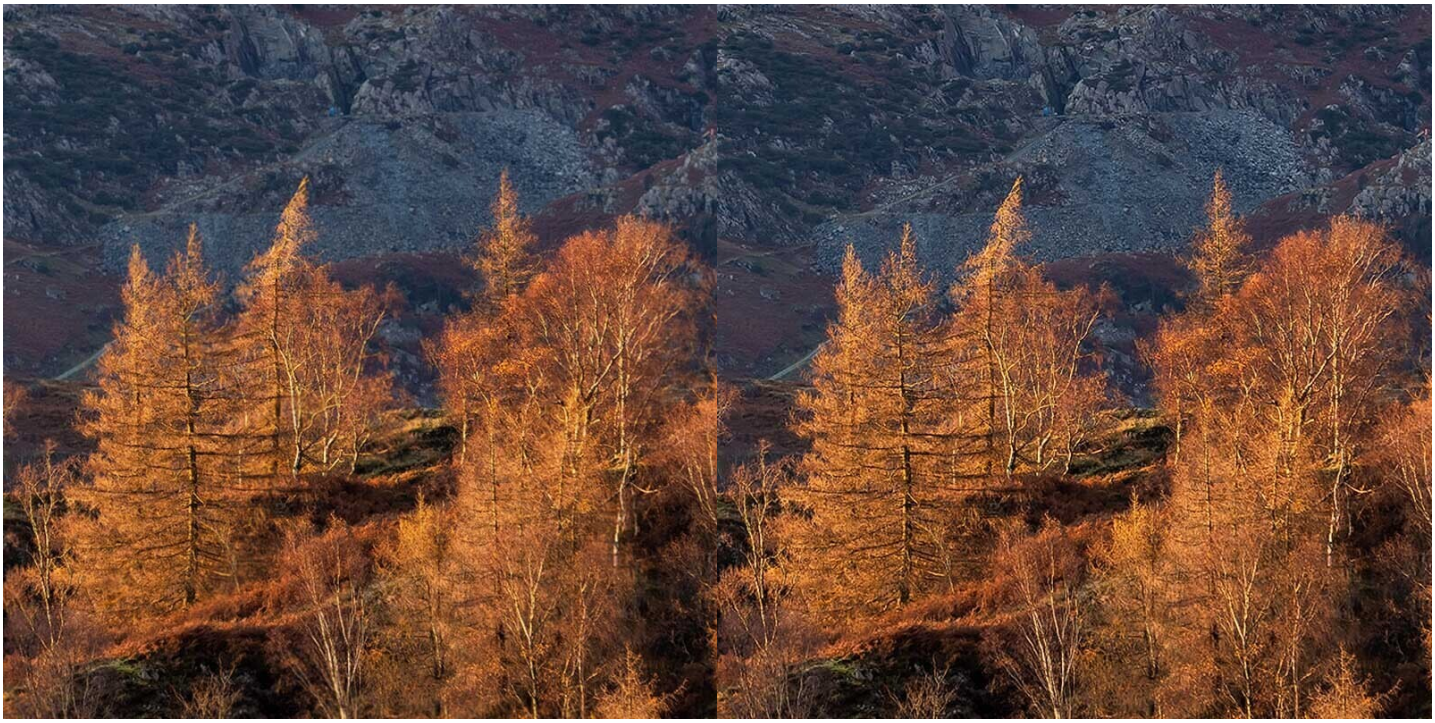
→ **TIP** When using a tripod it must be stable with no movement. If the camera senses movement the High Res icon will ***flash*** to indicate such and taking a shot will be disabled. IS is automatically disabled. Use a shutter release cable or set '***Wait Time***' as a delay, as Silent Shutter is automatically enabled the use of Self Timer is disabled. ***Hand Held*** does work surprising well, IS Auto is enabled and will be active although you still have to consider how steady you can hold the camera.

HIGH RES MODE DETAIL

The image below from Tarn Hows in the Lake District was an obvious candidate for High Res. With the beautiful golden light at sunset side lighting the fells and the Autumn trees there is a great deal of detail in the scene. For this reason I decided to use the 80mp Tripod Mode.



Tarn Hows, Lake District, 80mp High Res Mode, 12-100 Pro



Standard Resolution 20mp

80mp High Res

We can see compared to standard resolution there is additional detail in the High Res image. Both of these images are taken from the High Res file and the standard ORI file with the same processing settings.

That is not to suggest standard resolution is inferior, far from it. Remember that to create the High Res the sensor is moved over a number of images taken for each mode, 8 for 80mp and 12 for 50mp.

The frames are combined, analysed and then stacked into one image hence why it is *'computational'*, but in a sense it is still a 20mp image that has been interpolated.
The standard resolution image still has the detail but in High Res it is more refined and clearer, with less noise, better colour accuracy and increased dynamic range.
The standard file will sharpen more to enhance the detail with the consequence of being over-sharpened and creating halos.

Don't expect too much, it is easy to anticipate huge differences with High Res being 4x the size of standard resolution but in actual fact the pixel dimensions (what really matters) is just under twice the size. For online viewing you will not see any difference, where it matters is for ***larger prints***. Note when processing a High Res Raw image it will look very soft and sharpening applied to a standard res image will not be enough. It is much higher resolution and does need ***more sharpening***.

WHEN TO USE HIGH RES MODE

Hi Res Mode is very good for all the reasons above, therefore why not do all shots with it? There are a number of factors to consider, one of the main being file sizes, they are significantly bigger. What is the scene and does it warrant High Res, what benefit is there using it? Another which is harder to define is your intended use, will you produce large prints, or just use online where such high resolutions are redundant? Do you use High Res for every image only to post on Instagram?

I use High Res quite often, but not all the time. I recognise when a scene may benefit from the cleaner detail such as in the example above of Tarn Hows, or when there are creative benefits for longer shutter speeds. Let's compare the file sizes of 80mp and 50pm High Res Modes, considering that in standard resolution we have 20px.

STANDARD RES	**Raw 18mb - Jpeg 12mb - Tiff 120mb**
80MP HIGH RES	**Raw 64MB - Jpeg 33MB - Tiff 242MB**
50MP HIGH RES	**Raw 37MB - Jpeg 20MB - Tiff 143M**

Raw would be either 80mp or 50mp depending on the mode you have selected and file sizes thus as above. The Jpeg sizes above assume Fine is selected. A 25mp Jpeg F is 25mb approx.

TIFFS I always save *finished processed images* as Tiff files. My workflow typically is Global processing in Lightroom and final adjustments in Photoshop, including de-noising and sharpening. Tiffs offer the highest quality which I save as a master file and from these I produce additional files for their purpose, full resolution Jpeg for prints, low resolution for Social Media etc. But look at the file sizes, they are huge. For this reason I split how images are stored on separate external drives and cloud backups. See '***Workflow***'.

Given the information above we can see Hi Res does have a significant impact on files sizes, and therefore storage and the processing power of your computer. An older system with low memory and graphics is really going to struggle, whereas a newer system should handle them well, until you want to browse a catalogue full of High Res images.

There is no real answer to 'When to Use High Res'; perhaps the question is wrong and it should be "**What are the Best Situations to use High Res Mode?**"

LARGER PRINTS

PPI (Pixels Per Inch) and DPI (Dots Per Inch) are two completely different things and often confused. DPI is the number of dots of ink used in a print and the higher the better quality the print will be. The standard is standard **300dpi**, but this assumes the image has a high enough resolution. Dividing the size of an image in pixels by the print resolution gives the print size. Olympus Standard Resolution 5184 divided by 300dpi would give a print of 17.2"

A 42" Canvas in preparation for a home in the USA at time of writing.

As someone fortunate enough to sell prints regularly I do not have an issue with prints at 24" in standard resolution and even 32" are easily produced with some up-sampling from Topaz Gigapixel. Above this another factor that should be considered is viewing distance which indicates a comfortable viewing distance for larger size prints.

The human eye has a horizontal field of vision of 135 degrees and a vertical field of vision of just over 180 degrees which influences the ideal viewing angle and, therefore, the minimum viewing distance at which a print of a certain size can be viewed as a whole, rather than details. With viewing distance being approximately 1.5-2 x the diagonal of a print, a 32"x24" print diagonal is 40". Therefore the comfortable viewing distance is 60"-80" or 1.5m-2m.

With the pixel size of an 80mp High Res file being 10360, a 300dpi print will easily produce an image of 34". Factor in Viewing Distance and reducing the DPI slightly to 200dpi and we now have a print size of 42". And this is before using apps such as Topaz Gigapixel. So High Res will obviously give bigger prints, but should you use it for every shot just in case of a large print sale? Personally I use High Res for other reasons and use Gigapixel if I need to for larger prints.

CROPPING

This image of St Mary's Lighthouse in Whitley Bay started off life as a portrait orientation. I shoot very often in portrait having a fondness for how lead-in lines can be used but in this case I got it wrong.

80mp Tripod Mode, 12-100 Pro f7.1 @18mm 8M Exp (8x60s)

I imagined the textures of the sand in the foreground adding interest but in hindsight it was just empty space. Luckily I had used 80mp High Res so a crop provided an image of 7776 pixels wide, still higher than a Standard Resolution.

The reason I used High Res was not to have a larger file or increased resolution, it was to create a long exposure with reduced noise. The exposure was 60 seconds with a 6 stop ND. Over 60 seconds there was virtually no cloud movement,

High Res gave the effect of a longer exposure and with much lower noise than an 8 minute exposure with a 10 stop would have in Live Time, if I could have pushed it to 8 minutes. It was pure luck I later decided to change the composition.

CREATING LONGER EXPOSURES

High Res Tripod Mode 80mp. 12-100 Pro f6.3 32s Exp (8x4s)

This image of the aptly named '***Bridge To Nowhere***' in Dunbar, Scotland was a long exposure. Arriving just before high tide I waited for the path leading up to the steps to be completely submerged; the lack of detail was important to create the feeling of solitude. Using a 6 stop ND the exposure was 4 seconds, which means 4 seconds per 8 frames, a total of 32 seconds. As you can see it produces an effect which looks longer than just 4 seconds and with virtually no noise. I could have used the Live ND, but in this case I wanted the increased detail and textures of the bridge.

INCREASING DYNAMIC RANGE

8-25 Pro @ 8mm ISO200 f7.1 1/13s Exp.

This image taken on the coast of Portugal at dawn could have been a challenge. As High Res Mode takes a number of images and then blends them together there is a slight increase in Dynamic Range, and Noise is reduced.

Interesting is how it has dealt with the movement of water. I wanted the water to be detailed but not too sharp. Shooting at f5.6 to get a shutter speed of 1/10s and ISO400 the result is an image with water flow resembling 1/4s, plenty of detail and relatively no noise in the image.

High Res Mode does actually work well with moving water and it is very much worth using, especially with waterfalls. It was interesting how it dealt with water; the majority of it looked great with just the breaking wave and the rocks hitting the water looking too blurred. That was easily fixed using the original file and blending those area in.

→ **TIP** High Res Mode does actually work well with moving water and it is very much worth using, especially with waterfalls. It was interesting how it dealt with water; the majority of it looked great with just the breaking wave and the rocks hitting the water looking too blurred. That was easily fixed using the original file and blending those area in.

LIMITATIONS

There are some limitations to be aware of although they are largely not too restrictive. The EM-1 Mk3 has a **maximum aperture of f8** whereas this is removed with the OM-1. **Both have a highest ISO of 1600**, which does limit use for night photography although you probably would not want to use it in this situation anyway.

For longer exposures there is a limit of 60s. As this is the longest shutter the camera can meter for using longer shutter speeds would mean using Live Time/Live Bulb which are Computational Modes and not available to combine. But a 60s exposure merged 8 or 12 times is still going to look longer than just 60s.

Standard Bulb is also not available. **ISO LOW** is usually best avoided too unless really necessary. LOW settings are computational and have lower dynamic range so you may find highlights blow out more than a native ISO such as 200.

EXAMPLES

50mp Hand Held Mode 12-100 Pro @60mm f6.3 (12×1/13s Exp)

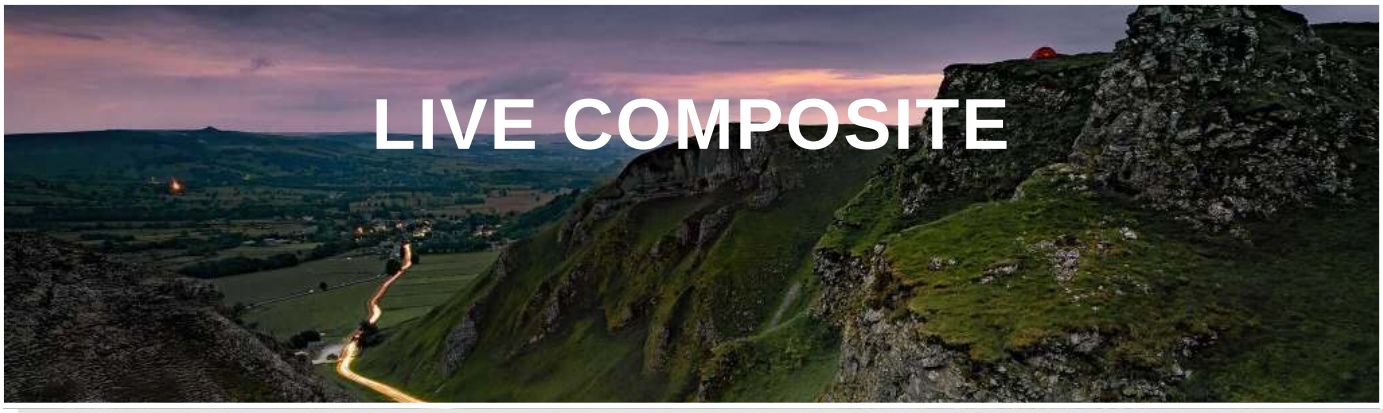
80mp Tripod Mode 12-100 Pro @12mm f7.1 8s Exp (8x1s)

80mp Tripod Mode 7-14 Pro @7mm f6.3 104s Exp (8x13s)

80mp Tripod Mode 7-14 Pro @10mm f6.3 16s Exp (8x2s Exp)

80mp Tripod Mode 12-100 Pro f7.1 2s Exp (8×1/40)

80mp Tripod Mode 12-100 Pro f7.1 @17mm 2.6s Exp (8×1/3 Exp)



LIVE COMPOSITE FOR DYNAMIC IMAGES

Live Composite is a feature unique to Olympus which allows a base image to be captured and then leaves the shutter open to record new light entering the scene. This makes it a mode that is nothing short of wizardry in how images can be created and is limited only by your imagination.

LIVE TIME & LIVE COMP

The two modes are often confused with new users not quite grasping the differences between the two modes.

LIVE TIME as we have seen is specifically for creating Long Exposure images of a duration to suit your scene. Once a few setting have been entered the camera shows previews and your long exposure image builds over the time period. The final image takes account of all tones in the scene and any changes during the exposure.

LIVE COMPOSITE is completely different; after a base image is taken with correct exposure the shutter is then left ***open***. Any new light entering the scene is recorded without the original base image over-exposing. This is the important difference, that the shutter can be left open for any amount of time in preparation for new light to enter the scene, or for existing light to move. Live Composite is ideal for shooting scenes such as Star Trails, Car Trails, Fireworks, Light Painting and Lightning.

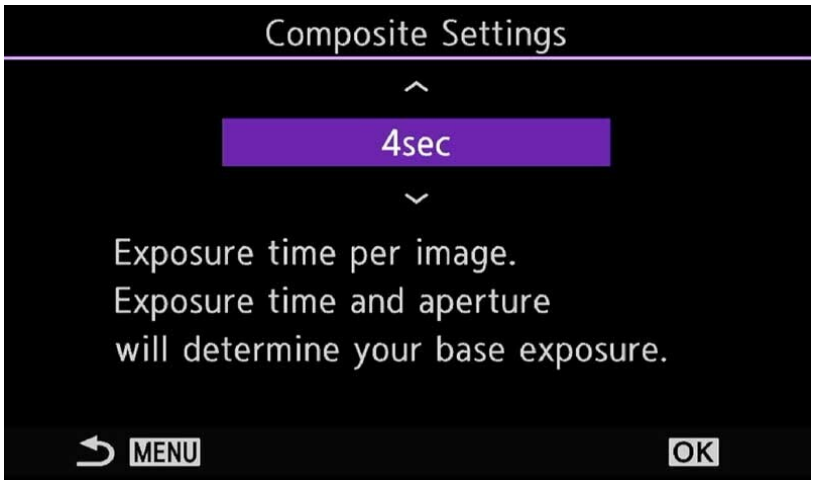
Live Composite actually works in a similar way to the 'traditional' method in Photoshop where a sequence of images are stacked as layers and the blend mode is changed to 'lighten', meaning only the brightest parts of an image are revealed into one frame. The advantage of Live Comp is only one Raw image is produced and it's much more convenient.

LIVE COMP SETTINGS

Live Comp Screen Mode Dial B>Live Comp

To access Live Composite turn the top ***Mode Dial to 'B'*** and use the front dial to scroll to it. You will be presented with the first screen showing your scene, settings and a message informing you to *press the shutter button to prepare*.

Before this we need to set a few settings. In Live Comp we *do not have a shutter speed* in the normal sense, rather an exposure per image combined with aperture and ISO. By selecting the appropriate aperture, ISO and Exposure Per Image we can obtain a good exposure and shift the pointer on the exposure meter to ***Zero*** where it is needed.



Settings Screen press Menu

The exposure and length per image is scene dependent, there are no hard and fast rules so you may need to experiment to find a setting you are happy with. For fireworks you may want to capture a relatively short exposure of just a few seconds to capture a cluster as they explode, or stair trails which may be 30-60 seconds. If you are not sure how many seconds to set in the Composite Settings, try a standard shot first in Manual or Aperture Priority. This will give a guide on what a 'good' exposure will be.
Note the longest per image is 60 seconds as with all computational modes.

→ **TIP** Remember Live Composite Mode leaves the shutter completely open until you end it. A whole sequence of images can be recorded allowing the light in scene to build up, such as star trails, light painting or car trails, OR it can be used in anticipation of capturing a specific event such as lighting. In the case of lightning set the sequence running and end it when the lighting strikes, or leave it running to capture more. However many frames are captured, 5, 50 for example, noise is calculated at the first frame, not the total length. If you had a sequence of 30 images at 30 seconds the total run time may be 15 minutes, but noise will be calculated at 30 seconds. It is a very efficient way of creating dynamic long exposure images without the consequence of high noise levels.

DAYTIME LIVE COMP

Live Composite is best used in lower light scenes at night or twilight but it can also be used in daylight. You will find however that depending on the ambient light an ND filter will be needed.

As it depends on the ambient light it's difficult to say which ND but I would suggest a 6 stop. Unfortunately Live Time cannot be used with the in-camera Live ND's because they are both Computational. A Variable ND could also be a solution but they will give a cross effect called cross polarisation used on lenses wider than around 12mm.

LIGHT TRAILS

I have to admit that I personally am not a huge fan of Star Trails or Light Painting, but Live Comp still has many other uses for landscapes. This image, a late evening up Winnats Pass on June 2 2022, the start of the Queen's Jubilee celebrations, and a young lady was wild camping on top of the cliff to get away from all the crowds. After a few shots on the top I dropped down a level so I could get her tent in the shot too. A bonfire, one of the many beacons had just been lit in the distance.

8-25mm Pro @8mm f6.3 ISO 200 Live Comp Mode (Base Exp 4s x 19 frames)

A few experimental shots were needed to determine the best exposure length for each frame. Starting off at 15 seconds it was under-exposed, I would need to open the aperture more from f6.3 or increase ISO which I didn't want to do. Even though the OM-1 has better noise control at higher ISO changing from 200 to 400 there is little improvement and I was always use lower ISO were possible.

At f6.3 to give me the Depth of Field and ISO 200 the exposure reading was optimum at 4 seconds per frame.

I expected quite a few cars with it being such a busy day but typically it was quiet by this time. But with Live Comp I can leave it running with the shutter open, and just wait for more cars to come. A total of 19 frames (19x4s = 76s) and enough cars had passed giving the effect I wanted.

→ **TIP** Be aware that Live Comp adds new light entering a scene and it can have unexpected consequences. In the image above a few attempts were aborted because whilst cars travelling away from me recorded very attractive red tail lights, traffic coming towards me would record white headlights which over-write the red tail lights. The same is true of skies. Live Comp can create very interesting effects with skies, almost like an impressionistic '***painterly***' effect. It's easy to over-do it so the result looks like a bad Instagram filter, and if left running for too long any bright clouds will eventually obliterate all other tones leaving nothing but a blank sky.

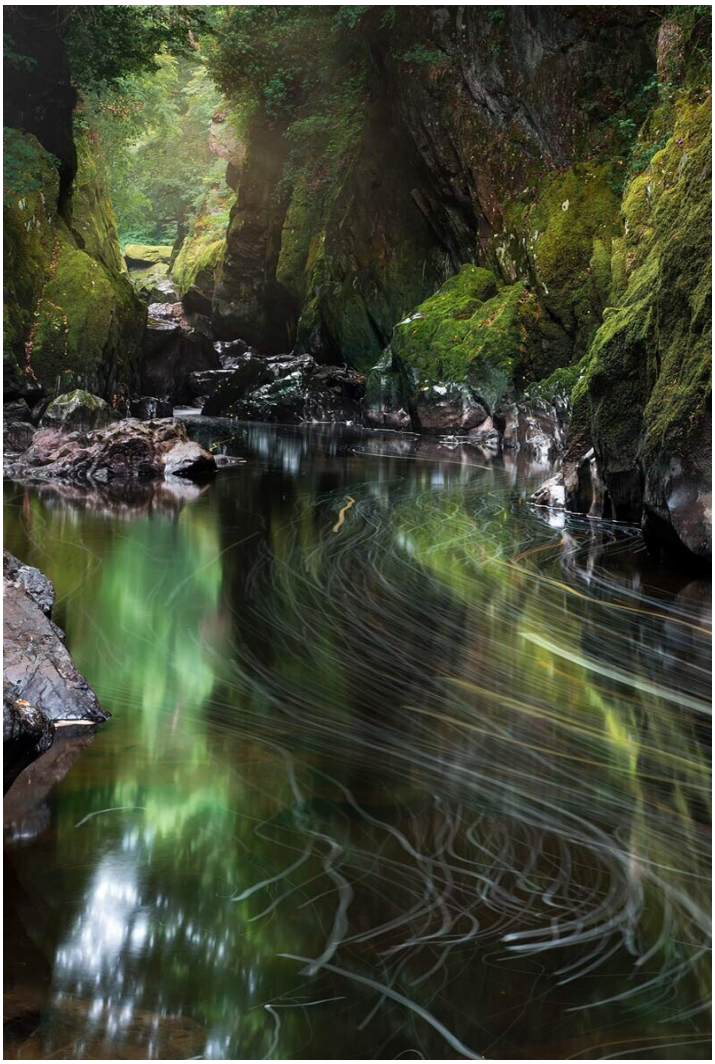
SLOW WATER MOVEMENT

We saw this image of the Fairy Glen in Snowdonia Wales in the Long Exposure Section where a slow shutter was used.

As water passes through the gorge and runs over the ledge in the opening it slows down dramatically and almost always has lines of bubbles on the water surface, lending itself to creative slow shutter images.

See how smooth and soft the water is? What would happen if Live Composite was used on the same location?

I decided to use Live Composite for something different. A Polariser was used to remove reflected light from the rocks and moss together with a 3 stop ND to slow the shutter to 4 seconds.



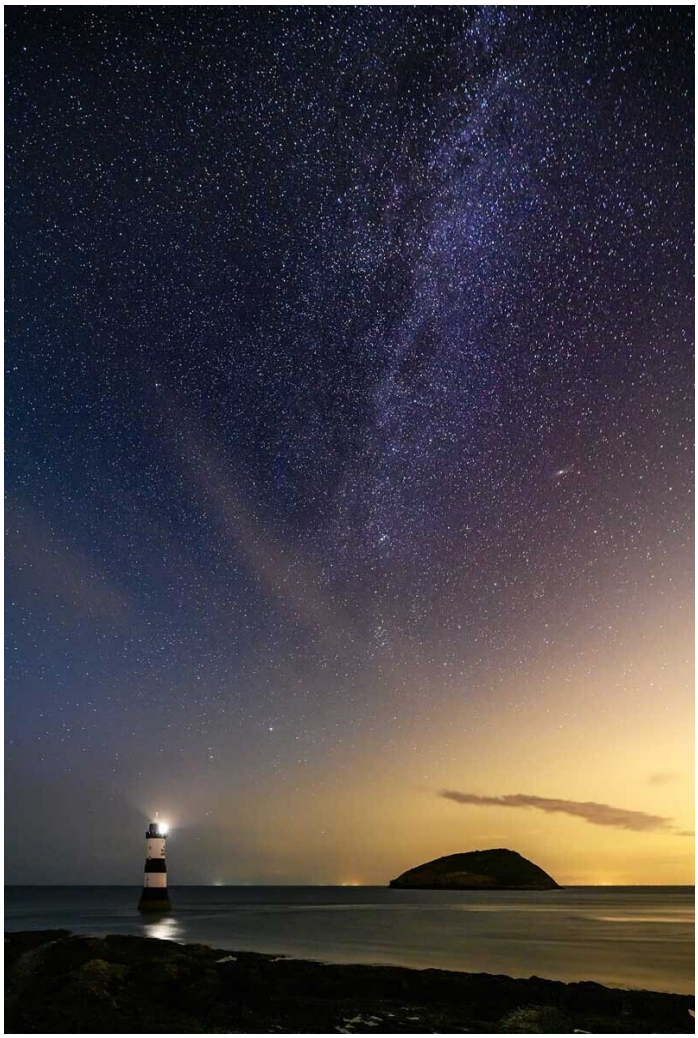
The result was an image looking like the water is full of snakes. The coloured trails are leaves that were floating on the water. Live Comp tends not to be suitable for faster water such as waterfalls since the brightest movement starts to overwrite any detail leaving it very 'milky'. But of course you may like the effect, it is all very subjective.

12-100mm @45mm f6.3 ISO200 Live Comp Mode (Base 5s x 4 frames)

Live Comp is most useful for creating star trails to capture stars streaking across the night sky in an arc, or a circular motion if the composition is centred on the Pole Star. They are not my thing personally but Live Comp can be used in other ways.

This image of Penmon Lighthouse on Anglesey was taken one night before I was starting a workshop the next day. The challenge was not so much the Milky Way but capturing the light on the lighthouse itself which only flashes once every 5 seconds.

Trying to time that was hard so I used Live Composite. With the 7-14 I had a maximum exposure of around 35 seconds before the stars would move.



7-14 Pro @7mm ISO1600 f2.8 Live Comp Mode

The 500 Rule gives a guide for Full Frame cameras, which is 500/ (divided by) lens focal length. For M4/3 we can simply half that and use 250, therefore 250/7 =35. It works as a rough guide.

500 Rule halved for M4/3 equals 250/focal length.

Live Composite was set at *30 seconds base, ISO 1600 at f2.8*. One frame was exposed for the Milky Way and then covered with a black piece of card I always keep in my filter bag, just leaving the lighthouse exposed. The card was moved to avoid a line just like 'dodging and burning' for an additional 30 seconds to gather more light from the lighthouse, and this was the result.

SKIES

Live Composite can create some interesting effects with cloud movement. Look at the sky in the first image of Winnats Pass and notice how it has a very 'painterly' brush stroke effect. The effect is more pronounced actually with shorter frame exposures of perhaps 2 or 3 seconds, allowing for different states of movement to be captured. For me personally I find it can look a little unnatural so I prefer to use Live Comp with longer base exposure times.

8-25mm Pro @ 8mm ISO 200 f7.1 Live Composite Mode (30s Base x 4 frames)

This image taken at *Hartland Quay North Devon* was taken with
Live Composite set at 30 seconds base exposure with a NiSi 6 stop ND and a 3 stop Reverse Graduated ND to balance the bright sky with the foreground.
When shooting a situation like this working out how many seconds to set the base exposure to is simply trying it out; insert the ND, set the base exposure and adjust it along with ISO and aperture to get a good reading with the exposure meter.

A more methodical approach is to set Manual or A Mode first and see what the exposure reading is. An exposure of 30 seconds x four frames gave the desired image.

Notice how some of the clouds in the left hand side resemble brush strokes overlaid in slightly different directions which is typical of Live Composite. The total runtime was 2 minutes, and although the clouds on the distant horizon were hardly moving if I allowed it to run any longer I risked too much movement on the sun rays on the horizon.

Another example in the Lake District of ***Ashness Jetty*** on Derwentwater. Again a 6 stop ND filter was used with a Medium Graduated filter on the sky. Live Composite was again set at 30 seconds and exposure was five frames. Balancing the effect of the cloud movement and the flattening out of water can be a little tricky.

As I said using shorter base exposures will create an even more dramatic sky with more movement, but will not flatten water enough. Running the number of frames for longer would flatten out the water more and will make the sky even more 'painterly'. To my tastes it can quickly look far too messy, however the great thing about Live Composite is that it allows creative freedom and that is the whole point;
experiment and do what makes you happy.

7-14mm Pro @7mm ISO 200 f6.3 Live Comp Mode (Base 30s x5 frames)

LIMITATIONS

There are some limitations to be aware of although they are minor.

The main limitation is Live Composite cannot be used with other Computational Modes such as High Res, Live Time and Live ND.

It is pretty obvious when you understand each of these modes is taking a number of frames and combining them, so expecting it to do two things at once just is not possible (a little like my brain). It sure is a shame Live ND cannot be used at the same time.

OTHER LIMITATIONS

Min and Max Shutter Speed – 1/2s and 60 seconds. Note this is the 'Composite Setting' and determines the exposure for each frame.

Max Live Comp Time – 6 hours (previous versions limited to 3). Anything more than an hour and I would use an external power pack.

Max Iso – Now 6400, previous versions were limited to 1600.

No Self Timer – Self Timer cannot be used but it is now possible to use hand held, obviously for no longer than a few seconds.

DETERMINING NUMBER OF FRAMES POST-SHOOT

If you're interested in the number of frames taken for a Live Composite image after the fact it can be hard to discover. All processing apps such as Lightroom will only show the Base shutter speed, in the case of the car trails image above 4 seconds. The only way to find it is in ***Olympus Workspace***:

Workspace > Info > Camera > Composite Settings

Click Info at the top right to open the Exif dialogue box and under Camera you will see the number of frames used to capture the final image. Interestingly it also says 'Lighten", which is the same blend mode used in Photoshop to create a similar effect from multiple stacked images.

A.I DETECTION MODE

OLYMPUS AI DETECTION

Olympus cameras are packed with features as you know reading this. In the section we will explore the newly expanded AI Detection in the OM-1. Although not new it has been improved and expanded to include more subjects. Although this guide is aimed at Landscape Photographers it is useful to understand the technicalities of the different focus modes and options, and have at least one CM saved just in case.

AI SUBJECT DETECTION

Olympus have been more than adequate for shooting moving subjects and the technology has been improved even more in the OM-1. Wildlife for example is not a new genre and once relied on nothing but skill. Tracking in previous models was good but a little hit and miss which was improved in the E-M1X with better tracking and the introduction of AI Subject Detection.

As the name suggests AI has been used to train the camera to recognise, focus and track cars, planes, trains, birds and animals, and it works very very well thanks to the improved focussing and faster processing power. Other settings need to be considered when using these modes.

	The camera detects cars or motorcycles. It tracks focus on such elements as the chassis (chiefly of types used in motor sports) or driver.
	The camera detects planes and helicopters. It tracks focus on such elements as the fuselage or cockpit.
	The camera detects trains. It tracks focus on such elements as the cars or driver's compartment.
	The camera detects birds. It tracks focus on such elements as the head or eyes.
	The camera detects cats, dogs and similar animals. It tracks focus on such elements as the head or eyes.
Off	Tracking subject selection disabled.

Setting the camera up for using Subject Detection Modes needs careful consideration depending on how often you you would use it. How you access the options and the general settings you have enabled will vastly increase your 'keeper' rate and enhance your reactions.

If you have followed the Custom Settings section you will see I recommend a ***Custom Mode*** which I save to *C4* with *Subject Detection* saved to a button. There are also options for the AF Target mode, Drive Mode and FPS (Frames Per Second) Shooting Mode (A, S or M) and ISO to consider.

The priority is fast shutter speeds obviously, so you may want to consider Auto ISO, or save a Custom Mode with a default 1/1000s shutter speed in S and alter ISO yourself as it is so easy to do. There are so many ways to set the camera up, we will look at a few options. Thankfully you do not need to change the general settings for each Subject Detection Mode.

SUBJECT DETECTION

New in the OM-1 are the Subject Detection AF Modes. Note on the table above that for birds and animals the A.I machine learning has been trained to detect each category, and that focus will track either the body, head (or cockpit), or eyes depending on how prominent they are.

Menu AF 2.AF>Subject Detection

The detection and success, or failure of it also depends on the ***AF Target*** set. Birds in flight for instance a larger target will be adequate, a smaller target would more suit a bird in a tree with branches in front of it that can confuse the system.

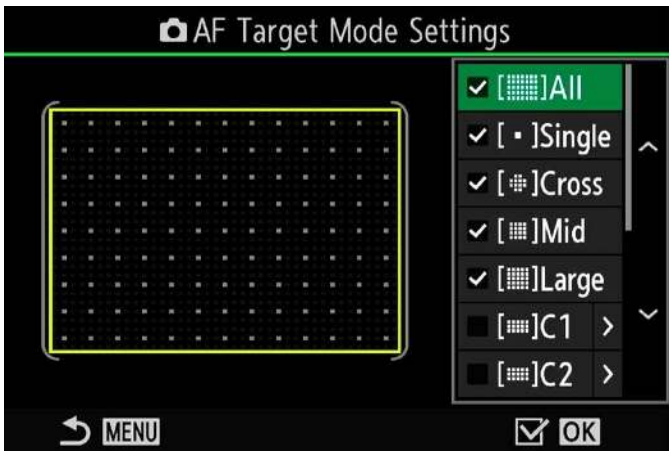
Do not enable Tracking with any AI Detect Modes, it will actually impede the success of the AI.

→ **TIP** Set Subject Detection to a button for quick access.

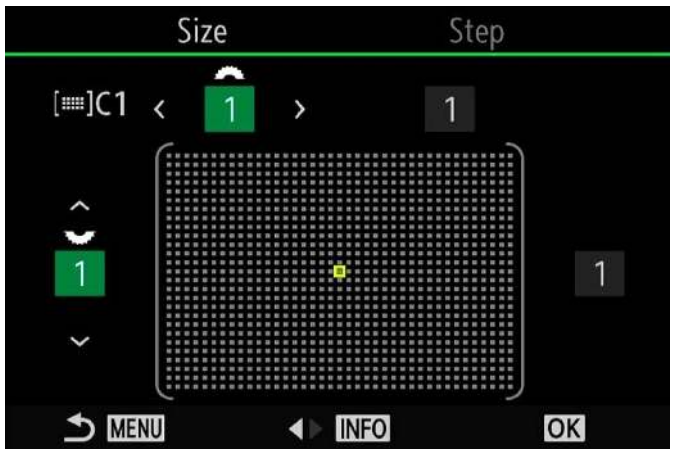
AF TARGET AREAS

AF Target Areas are crucial to understanding how how Subject Detection actually works. With these we can set various sizes of target areas or AF grid sizes whilst shooting.
In A.I. (Subject Detection) Modes the grid acts as the area where the camera will try to detect the subject and will activate the focus point, detecting the best place to focus according to the table above.
For a bird for instance, it will try to focus on the body or if prominent in the frame the head or even the eye. But it is not infallible and when there are two or more subjects it will detect both, not knowing which to actually focus on. We need to be aware of where it can go wrong, and what to do about it with ease.

Menu >AF>5 AF Target Mode Settings



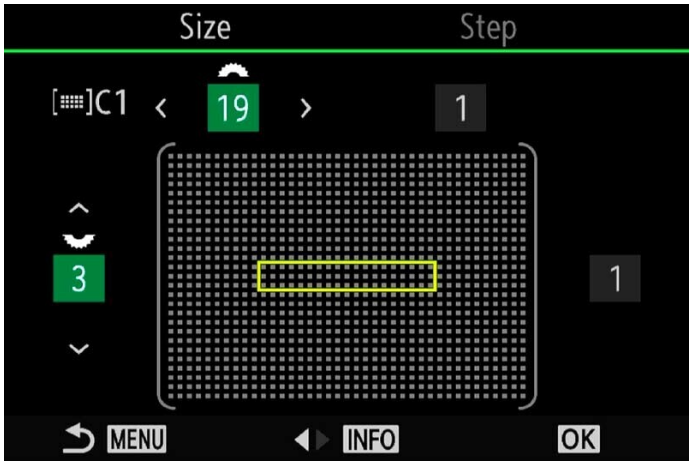
AF Target Mode Settings



Custom 1×1 Target Area

Screen 1 shows the AF target Mode Settings. There are 5 'standard' target modes and two modes that can be customised, C1 and C2.

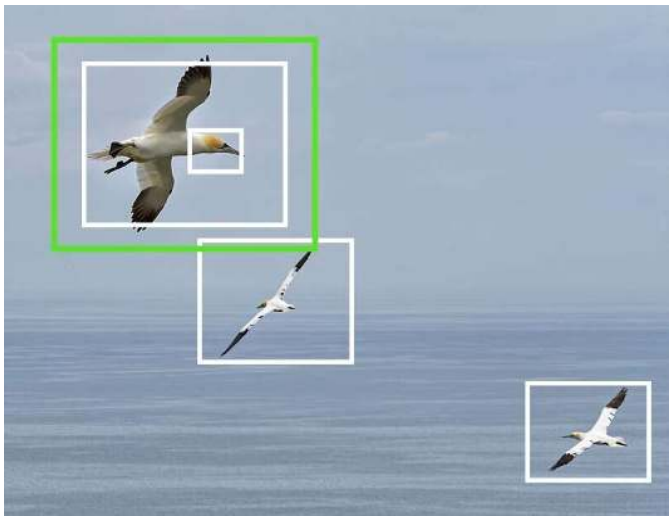
Activate them all by ticking them and customise the C1 and C2. C1 I have enabled with a Single 1×1 Grid which I have enabled mainly for Landscape work to allow finer placement of the focus point. Accessing them is easy, just nudge the rear Jog Lever to activate the focus point and turn the front dial.



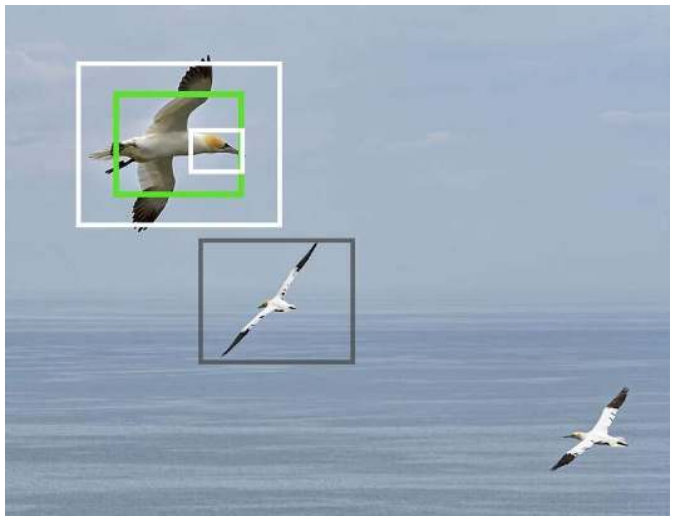
Custom Rectangular Target Area

THE IMPORTANCE OF TARGET MODES

Using A.I Subject Detection is extremely good but as said above not infallible. When two or more subjects are in the frame it can detect them but will not know which is *priority*. We then have to take a little control to tell it which is priority by altering the *Target Mode*.



AF Target Large



AF Target Medium

Here the *AF Target* used is Large. The Bird Detect has detected the main subject and also other subjects in the frame but it doesn't know which is priority. It will struggle even more if the subjects overlap. By changing the *Target Mode* to Medium or Small we can tell the system which subject has priority and the other subjects will be ignored.

RECOMMENDED TARGET MODES

Note that ***C-AF*** is best to use and we *do not need to use tracking*. If you followed the ***Custom Options*** section you will have the Lever 1 setting set to C-AF/MF with a Medium Target Area set and in position 2 C-AF/MF with optionally a Small Target Area set.
You will have realised by now that saving settings gives many options, and the Lever can be used for quick access. Choose two you think you will use the most and save them on the lever.

LARGE OR ALL – When there is one subject such as a bird in flight. The Subject Detect will quickly detect and track the subject across the frame.

MEDIUM – When there is more than one subject and refining of the main subject is needed.

SMALL – When there is more than one subject or a busy background such as a bird on a perch or in trees.

CROSS AND CUSTOM – These are useful to further refine the target area for you subject. For instance a rectangle grid can help when the AF focusses on a busy background or foreground

STATIONARY BIRDS

A.I Detect Mode is superb for Birds In Flight, but can have a problem with perched birds or stationary birds when foreground is in the way. The detection gets confused and sometimes will not find the bird, which may translate to other subjects too, if for example you have an animal peeking through trees.

I would imagine this won't be an issue with the plane or car mode, if I saw a plane peeking thought bushes I'd be more inclined to run.

This little Puffin was not an issue for the AI Detect Mode. Using a small focus target I was able to get the eye sharp and the AI tracking did follow it as it moved.

40-150 Pro A.I Bird Detect ISO 1000 f4 1/640s

This image however was different because of the foreground, and despite using a small target focus point the detection was jumping all over the place. Notice focus is on the stems in the foreground and the bird was out of focus.

40-150 Pro A.I Bird Detect ISO 1000 f4.5 1/500s

Swapping to standard C/AF and turning off A.I Detection was the solution. I was able to get a shot sharp, and when it flew away enabling Detection again nailed it. If you find issues with similar situations it's worth trying with a small target mode first and then with Detection off which does seem more suited to Birds In Flight.

Another option would be to utilise AF Limiter to set a limit that would exclude the foreground (see below).

A cute Puffin on the Farne Islands in Northumberland.

Bird AI Detect worked flawlessly with this image using a Medium Target. The AI found the eye and managed to keep locked onto it each time it found the eye, despite how much the bird was moving its head. Continuous AF had a few issues which seems to have been resolved with the ***Firmware Update v1.2***.

100-400 @ 400mm A.I Bird Detect ISO 640 f6.3 1/3200s

→ **TIP CAF + Tracking** is best avoided in AI Modes because it will actually confuse it. .You are simply asking it to do too much at once when AI Detection works very well as it is.
Use AI Modes with ***Continuous AF*** for best results.
In some instances as the example above it may be best to switch off AI and just use CAF, and experiment with Tracking, it may suit the subject.
Many have reported and my experience confirms that when AI becomes confused mainly because of foreground elements it is best to switch it off. I have found when AI has not performed as well as I hoped using ***Tracking*** can be better although it will not keep up with fast movement.

AF SENSITIVITY

AF Sensitivity can be altered plus or minus 1 or 2. When would you want or need to alter it? Fast moving subjects can benefit from having sensitivity increased to allow the AF to react faster.

Menu>AF>3.AF>C-AF Sensitivity

This does mean if another subject enter the frame the AF can switch more easily so setting the AF ***less sensitive*** could help.

AREA POINTER

Note that AF sensitivity is not the same as Area Pointer which does seem to confuse some. Area Pointer has two modes;

ON1 shows a green box inside the Target Area when focus has been achieved.

Menu>AF>2.AF>Area Pointer

ON2 will show multiple green boxes when using ***C-AF or C-AF+Tracking***. It is just a visual aid showing what is in focus and is not more accurate than having one shown.

AF LIMITER

There may be times when the lens struggles to gain focus or focusses on a background or foreground element instead of the subject.

Menu>AF>3.AF>AF Limiter

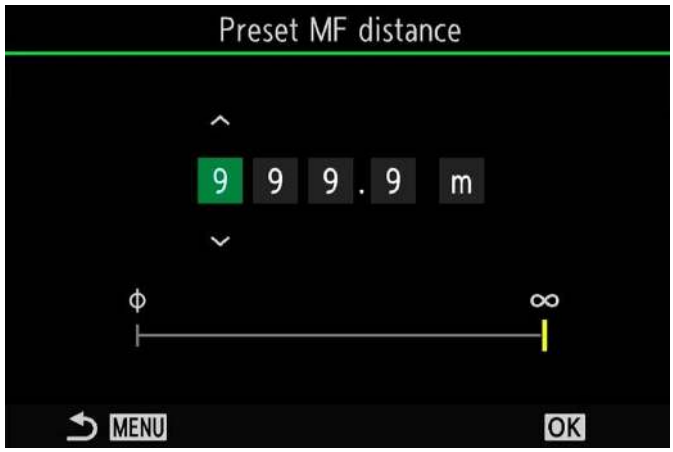
AF Limiter allows you to save ***three presets*** with a minimum and maximum distance to control the range the AF will try to focus in. Make sure a wide enough range is set.

You have to guess the distance or use the PRE-MF 'hack'. Go to PRE-MF, press info and focus on the area you want to exclude such as the background. The screen will show the distance instead of guessing it. Do the same for the foreground if needed. Now in AF Limiter set a range between these distances.

An advantage of having this saved to a button in a CM not just for quick access is it will not be active for your next session once the camera is turned off and on again, thus avoiding problems wondering why your AF is limited. Do remember if you set up ON1, ON2 and ON3 and want to save them as part of your CM you must resave the CM again. As with all CM's any changes you want to make permanently must be resaved.

PRESET MF DISTANCE

Preset MF is exactly what it says and is used for setting a fixed distance for focus. If for example you're taking images in a fixed spot it can be useful to program the focus to the exact distance and prevent the lens from hunting.



Menu>AF>6.MF>Preset MF Distance

Remember this is manual Focus. Ensure you have set AF-ON to 'AF on in MF' to allow for AF still to be used Menu>AF 1.AF>AF-ON in MF>Yes

There are two ways to set Preset MF Distance:

1 - Menu>AF> 6.MF>Preset MF Distance and enter manually

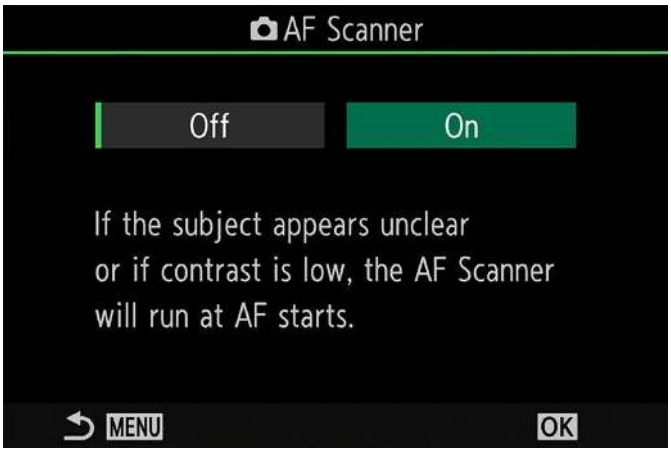
2 - Top AF Button, scroll to Pre-MF. Press Info and focus on the area you want to save, press OK to store it.

I personally do not find much of a need for Pre-MF. If I do want to lock focus on a particular area I can just manually focus or auto focus and then lock it into MF, but I can imagine situations when the ability to have it saved on a button and immediately recall it would be useful.

Note that recalling from a button only switches Pre-MF on or off. To change the distance saved you can actually press/hold the button and turn the front dial, although it is probably easier to access from the top left button or the Super Control Panel.

AF SCANNER

Longer lenses can sometimes struggle when contrast is low. AF Scanner will force the AF to try and rescan to acquire focus. It can lead to the lens 'hunting' where it scans from near to far focus, but disabling it can mean out of focus images. I tend to leave it on by default and revert to MF if there is an issue.



Menu>AF>3.AF>AF Scanner

RELEASE PRIORITY

Release Priority determine whether the camera will take an image even if focus has not been confirmed. Set to off means it will be set to 'Focus Priority' which is much more sensible. The camera will not take an image if focus is not confirmed, but in continuous drive modes it is effective on the first frame only.

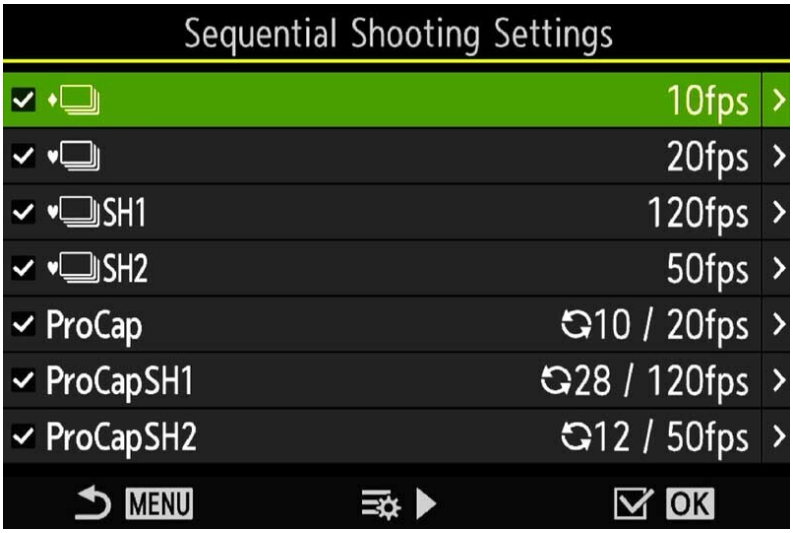
Menu>AF>1.AF>Release Priority

C-AF CENTRE PRIORITY

Similarly AF Targets Cross, Mid and Large and Custom Targets can be set to give priority towards the centre of the target area. I prefer to set these ON and use a smaller target if I find an issue.

SEQUENTIAL SHOOTING

When considering AF Modes for use with any of the A.I Subject Detection Modes it's also important to consider which ***drive mode*** to use. Drive Modes are easy to access from the main settings on the top left, and saving one as a CM is useful. I tend to use Silent SH2 but it is important to understand each.



Menu>Camera1>7.Drive Mode>Sequential

Sequential Shooting settings, or Drive Mode will affect your chances of getting the shot just at the right time obviously, but there is no point setting a drive mode that will capture too many images, your card will quickly fill and the scene may not warrant it.

Equally a drive mode too slow means you miss the shot. Birds in flight for example, some dart all over whilst others are more sedate; a perched bird may be relatively still whilst a Kingfisher diving for food would need precise timing. The same is true for other subjects, how you choose the drive mode can affect your keeper rate.

DRIVE MODE COMPARISON

MECHANICAL SHUTTER	ELECTRONIC SHUTTER	ELECTRONIC SHUTTER (SH2)	ELECTRONIC SHUTTER (SH1)
1 to 10 FPS	5-10-15-20 FPS	25-50 FPS	60-100-120 FPS
Continuous AF	Continuous AF	Continuous AF	AF 1st Frame
Metering	Metering	Metering	Metering 1st Frame
Live View	Live View	Live View	Live View
Blackout Between Frames	Blackout Between Frames	No Blackouts	No Blackouts
Frame Count Limit 2-99	Frame Count Limit 2-99	Frame Count Limit 2-99	Frame Count Limit 2-99
No Minimum Shutter *	No Minimum Shutter*	1/320 @ 25 FPS – 1/640 @ 50 FPS	Min Shutter 1/15

Listing out the different drive modes in a table and we can clearly see the pros and cons of each.

Mechanical shutter has the slowest FPS obviously because it is a physical shutter which has to open and close, and there is blackout when the EVF will go black momentarily between frames. AF is continuous for each frame and exposure will be metered for each.
Electronic shutter is the same but can double the FPS rate.
SH2 can increase FPS up to 50 and with no blackouts, whilst **SH1** can go to a huge 120 FPS with no blackouts but at the expense of AF and exposure metering being for the first frame only.

This leaves us with plenty of options but also decisions to make. To avoid taking too many images the ***Frame Count Limit*** can be set from 2-99. This is a great option when speed is of the essence but you want to avoid filling your memory card. Once the limit is reached shooting will end.

PRO CAPTURE

In addition to the drive mode options we also have Pro-Capture. This feature has similar settings to the drive modes but also user set pre-capture frames that are recorded *before* the main frames.

Menu>Camera1>7.Drive Mode>Sequential

Using the Kingfisher diving into water situation again, how well could you anticipate and press the shutter at the exact moment its beak is mm's away from the water? Not easily. Pro-Capture aims to assist by capturing a set number of frames the moment the shutter is half pressed and thus reduce the delayed reaction between a half press and full press. Images are stored in the camera buffer and then written to the card.

PRO-CAPTURE COMPARISON

PRO CAPTURE	PRO CAPTURE (SH2)	PRO CAPTURE (SH1)
5-10-15-20 FPS	25-50 FPS	60-100-120 FPS
Continuous AF	Continuous AF	AF 1st Frame
Metering	Metering	Metering 1st Frame
Live View	Live View	Live View
Blackout Between Frames	No Blackout	No Blackouts
Pre Frames 70 Max	Pre Frames 70 Max	Pre Frames 70 Max
Frame Count Limit 2-99	Frame Count Limit 2-99	Frame Count Limit 2-99
No Min Shutter *	1/320 @ 25 FPS – 1/640 @ 50 FPS	Min Shutter 1/15

We can see here Pro-Capture is very similar, in fact the same as the Sequential settings, the difference being the ability to set how many frames will be taken as soon as you half press the shutter button. It is an ingenious solution to reducing the risk of missing a shot through slow reactions times. There are some limitations to be aware of:

LIMITATIONS

MINIMUM SHUTTER SPEED – As noted in the tables SH1 has a minimum of 1/15s shutter speed, and SH2 1/320s @ 25FPS or 1/640s @ 50 FPS. This could limit the usefulness depending on what you are shooting. Having said that you would only need high frame rates with a fast moving subject and would want a fast shutter speed.

NO MINIMUM SHUTTER* – There is no minimum shutter speed where indicated but bear in mind there is still an inherent minimum speed. If you are shooting at 20FPS and have a slow shutter speed of 1/2s the camera simply cannot shoot at that frame rate. How you are warned of this depends on the shooting mode used:

Aperture Priority – *Shutter Speed will blink. Image can be taken but will be under-exposed*
Shutter Priority – *Lower shutter cannot be selected and Aperture will blink.*
Manual – *Lower shutter cannot be selected and Exposure Meter will blink.*

REDUCED FRAME RATE – The buffer where pre-frames are stored in Pro Capture can slow down significantly and do require the fastest UHS-II cards you can obtain. Even so you can expect the buffer to affect the maximum time high speeds can be used. With 25FPS you may achieve 5 or 6 seconds of full bust before the frame rate drops whereas at 120FPS you may only achieve 1 or 2. Frame rate also decreases over 16000 ISO. Bear in mind high frame rates are designed for fast action to capture a brief moment in time and not for continued shooting over seconds.

SH2 REDUCED AF OVER f8 – Focus accuracy can be impacted when using SH2 and an aperture smaller than f8. This is not necessarily an issue when wider apertures would normally be used, but could be an issue with slower lenses like the 100-400 f5-6.3.

LENS COMPATIBILITY – Only selected lenses are compatible with SH2 50FPS and Continuous AF. Other lenses will have FPS reduced to 25.

- 12-40mm F2.8 PRO
- 12-40mm F2.8 PRO II
- 12-100mm F4.0 IS PRO
- 12-100mm F4.0 IS PRO
- 150-400mm F4.5 Pro
- 300mm F4.0 IS PRO

CUSTOM MODES

In the **Custom Modes Section** we reviewed how to set up CM's with suggestions for each of the four available. Only one was dedicated to Wildlife or any action. For me personally it is enough, with buttons set for access to the many options and with quick access to drive modes I don't feel I need more, but I am a Landscape photographer; what if you want more?

Refer back to the '***Buttons' Section*** where we set up a set of options for use with A.I Modes. ***Subject Detection*** was saved to a button along with other important features to make them easy to access.

AF Limiter and **Pre-MF** were mapped to buttons which allow you to enable or disable them quickly, and adding them to My Menu allows quick access to change the actual parameters in each one too.

OTHER CUSTOM MODE SUGGESTIONS

Study the additional Custom Modes below to see how they vary and how you can create sets depending on the situations you are trying to shoot in. Personally I would keep Custom Modes simple and ensure they have very distinct differences for the purpose you are creating them for. For instance an additional CM specifically to use with Pro Capture.

SUB DETECT
FACE DETECT
ISO
AF-ON
AF AREA
*C-AF/MF-MED
**C-AF/MF-SM
MF
WB
AF LIMITER
PRE MF
D ZOOM

(Wildlife CM from 'Custom Modes' Section)

GENERAL
Manual Shooting Mode
ISO 200 (Default)
Metering Centre Weighted
Shutter Speed 1/1000
Drive SH2 25 fps
AF Sensitivity 0
Stabilisation Auto
Lever 1 C-AF/MF Med AF Target
Lever 2 C-AF/MF Small AF Target
Release Priority Off
AF Scanner ON

(Additional Wildlife CM)

FAST MOVEMENT
Manual Shooting Mode
ISO Auto (12800 Upper Limit)
Metering Centre Weighted
Shutter Speed 1/4000
Pro Capture SH2 50fps 20 Pre-Frames
AF Sensitivity +2
Stabilisation Auto
Lever 1 C-AF/MF Med AF Target
Lever 2 C-AF/MF Large AF Target
Release Priority Off
AF Scanner ON

(Additional Wildlife CM)

Combining a set of Customs Buttons and a Custom Mode gives an incredible amount of flexibility.

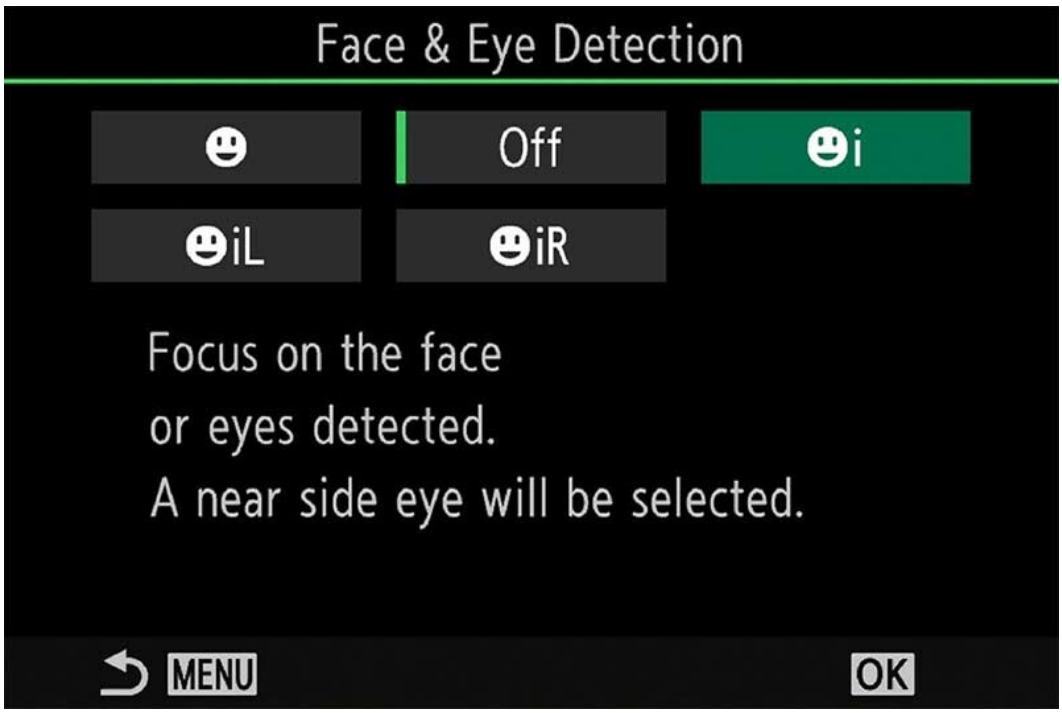
In the ***General CM*** the drive mode is SH2 set at 25fps and ISO is the default 200. These are very easy to access and change on the fly so unless your genre leans more towards wildlife or action there is no need to set up different CM's. If you do want to, bearing in mind my approach is as a Landscape Photographer who 'dabbles' from time to time in wildlife, set up a CM which is different in significant ways.

The ***'Fast Movement' CM***, for birds in flight or any subject with significant movement (The AI Mode is mapped to a button to make it quick to access and change) may not look very different, but notice ISO is Auto, shutter speed will default to 1/4000, Pro capture is enabled with a number of pre-frames, and AF sensitivity is increased to the max +2. The Lever settings could be changed also to any Target mode you prefer.

A note about setting CM's to buttons. I advocate not doing this although I know some do prefer it. Firstly setting a CM to a button means the button cannot be used for a feature, secondly there can be conflicts where some settings may not be recalled, leaving you wondering what on earth is going on.

FACE DETECT

Face Detect can be useful especially when you want to shoot a spontaneous portrait, and having it mapped to a button for quick access makes it more convenient. You could also save it into My Menu. I tend to have it disabled for landscapes because it can often find what it thinks is a face in ground or rock patterns.

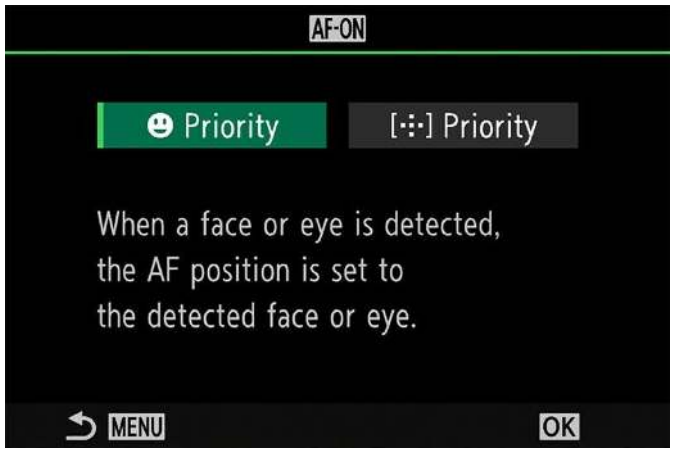


Menu>AF>2.AF>Face & Eye Detection. Also access through Super Control Panel or a button.

OPTIONS

AF-ON

Allows the focus priority to be given to the face, or the focus target (your green focus point). For instance if the focus target is not on the face and [Target] Priority has been enabled focus will be set on where the target is. Set it to Face Priority, otherwise there seems to be little point using Face Detect.



Menu>AF>2.AF>Face & Eye AF Button

FACE SELECTION

A *button only feature*. Assign to a button and each press will move detection to another face when there are more than one. *Press/Hold* the button and turn the front wheel to manually scroll through the available faces. Note that when more than one face is detection the AF Target does not give priority to any particular face so Face Selection is needed.

Face Selection Button Only Cog

Menu>1.Operations>Button

→ **TIP** It's unfortunate *Face Selection* is only available when assigned to a button because it is useful for quickly shifting the selected face. It's easy to test without annoying your family, search on your PC '***Faces'*** select 'images' and give it a try. You will need Face Selection mapped to a button and Face Detect turned on.
If you have a CM set up just assign any button, when you turn off the camera it will be reset back to your default button. Face Detection is really designed for spontaneous portraits, not studio or posed portraits where you have more time to consider the focus point, so for this reason I have Face Detect mapped to a button as a useful 'just in case'.
If you do find yourself using Face Detect often when there are groups of people you would need Face Selection mapping to a button too.
This uses two buttons, so consider a dedicated CM for it. Alternatively you could save Face Detect to MyMenu and then just map Face Selection to a button. This as a work-around gives quick access to Face Detection and Face Selection, and uses just one button.

Bird Detect 40-150mm Pro @ 60mm f4.5 1/1600s ISO200

100-400 @ 400mm A.I Bird Detect ISO 640 f6.3 1/3200s

Bird Detect 40-150mm Pro @ 110mm f5 1/1600s

ISO200

Bird Detect 40-150mm Pro @ 150mm f4 1/640s

ISO1000

Animal Detect 100-400mm @ 400mm f6.3 1/500s

ISO640

Bird Detect 40-150mm Pro @ 150mm f4 1/1640s

ISO1000

GEAR

Using the right gear is obviously essential and whilst things like bags are very personal I can at least give a few pointers in what to look for, you may get a few tips or see something you haven't considered. There are tips for tripods, macro lights and a few accessories you may find useful too. These are all items I own and use so I feel qualified being able to recommend them.

LENSES

The three main lenses I use for landscapes are the m.Zuiko 40-150mm Pro, 12-100mm Pro and 8-25mm Pro. Although I do have other lenses, the 100-400mm, 60mm Macro, 17mm 1.8 and 45mm 1.8 to name a few, the three below are the lenses I use most.

1) 40-150mm f2.8 Pro The ideal lens for long landscape images, it has a great range and is not too long for landscape work. Other lenses like the 300mm Pro are I find too long and better served for wildlife, although of course it can be used for landscapes. The 40-150 is razor sharp and is already firmly raised on a pedestal for being one of the great Olympus lenses. Its also good for wildlife and combined with the 1.4 teleconverter it has additional flexibility.

2) 12-100mm f4 Pro One of the best all rounder lenses in the Olympus lens line-up, it has for me replaced the 12-40 because of the range, making it ultra flexible. Not the fastest lens at f4, but it is a general purpose lens and with an additional stop of stabilisation built in it makes up for the slower aperture. For landscapes it doesn't need to be faster. For someone like me who loves wide angle lenses they do not suit every location. The Lake District for example I find the 12-100 much more suitable, images are in general less about close foregrounds and wide lenses will push background fells further away.

3) 8-25mm f4 Pro Although I also have the 7-14 f2.8 Pro the 8-25mm has largely replaced it for landscapes. The 7-14 is now reserved for low light and night photography, not that I do a great deal. The 8-25mm has a better range, and for someone who loves wide lenses the slightly longer reach is useful. Wide lenses need a good foreground, a location like the Peak District is perfect for wide lenses, and without a good foreground a wide lens is wasted. The main reasons for swapping to the 8-25 is the filter thread, much more convenient for using filters than the 7-14 though of course it is possible, and the reduced lens flare. I do find the 7-14 flares easily because of the convex front element, and is prone to sensor flare which is a devil to remove. The 8-24 is very sharp, not quite as sharp as the 12-100, but a little sharpening in post makes up for it. It is slower that the 7-14 obviously, but its a landscape lens; they tend not to move too fast.

CAMERA BAGS

My weakness, I love a good camera bag. Just like the cliche of women and shoes many photographers have far too many bags, I must have 10. Time to sell a few I think. The obvious pointers are storage and comfort, external pockets for sliding hats and gloves in, drinks bottle pockets and straps for attaching a coat or tripod. Personally I never strap a tripod on my backpack but I do often strap a jacket on for when it gets colder. What suits you will dictate the type of bag you go for, a backpack, shoulder bag or both depending on situation.

1) F-STOP AJNA 37L I am a huge fan of the F-Stop backpacks and use the Ajna 37L (shown) and the larger Tilopa 50L. Admittedly not cheap the Ajna will set you back £350 plus another £100 approx for the ICU. Based around a light outer shell with an aluminium frame different size ICU's (Internal Camera Unit) can be inserted depending on your trip; insert a small ICU for a camera and lens and have the rest for clothing etc if you're going on a long hike. Plenty of zipped side pockets and a large front storage pockets accommodate just about anything. The best thing is the top zipped lid which opens to allow quick access to a large storage space for gloves, hats, head torches etc, and a smaller top pocket for a map or mobile. Tip, get the straps with it, they can be fitted on the top, sides and or front and they are great for strapping a coat on. Buckles are now aluminium for strength and it will also accommodate a drinks bladder.
F-Stop Website – *My Workshop Clients can get 15% off please contact me.*

2) THINKTANK MINDSHIFT BACKLIGHT 26L For a relatively small backpack the Mindshift Backlight 26L is one of the best I have used and one of the comfiest. The front pocket is huge and can easily accommodate a jacket or fleece which is what I look for in a backpack. There are dividers too to separate items. The interior of the main body can actually hold a huge amount of gear, easily two bodies four lenses and accessories. What it lacks is exterior zipped pockets other than the front, but it is still a great backpack. Rear access is a must for any backpack, when it is put down on wet ground it is the front that will get wet, avoid any that have front access or you get a wet dirty back.

Thinktank Website

3) VANGUARD ALTA RISE MESSENGER BAG Messenger/Shoulder bags may be your thing, personally I don't use one as my main bag because all the weight is on one shoulder or across the chest. The reason I have one is because they are great for on the coast when you know you will be standing in water and cannot put your bag down. Most rear access backpacks allow for you to spin it round and open the back but in winter with a coat on its never easy. Another good reason to have one is if just popping out for a few quick shots you can take just what you want and leave the rest at home. It looks like at the time of writing the Alta Rise has been replaced with the VEO Select range which maintains the two best features, a top zipper access and internal unit which can be completely removed to turn it into a standard bag. And they make great tripods too.

Vanguard Website

TRIPODS

As someone who has owned and still owns too many tripods I'm pretty well qualified to advise. With the amount of image stabilisation in camera bodies these days including Olympus tripods seem less important, but they are. By all means enjoy the freedom of shooting hand held, I do more and more. But a tripod is still needed for Long Exposures, bracketing (although it can easily be done hand held too) panoramic images, and Macro. The main point of a tripod which is overlooked is to slow you down. Consider the scene and your composition, take your time, make adjustments and wait for the light. There are hundreds to choose from, and an

old addage still remains true today, tripods can be cheap, sturdy or light; pick two because you can't have all three.

The main points to look for in a tripod are height, weight and sturdiness.

HEIGHT – Select a tripod with the greatest height excluding the centre column which should only be used as a last resort, it will introduce the most vibration. The higher the better without the centre column. It will also be more convenient when spanning across gaps.

WEIGHT – The least weight is obviously better but selecting a tripod based just on this is false economy, it probably will not be sturdy enough and a tripod a few hundred grams more really isn't a big deal yet will be stronger. Carbon Fibre is lighter but at a cost. More leg sections means a tripod is more compact but is also heavier, not a great deal more but it will add to it. Travel Tripods are usually exclusively just for that, travelling. I would not rely on a travel tripod as my every-day tripod unless it is of significant quality and quality comes at a price.

Better I think to have a main tripod and get a cheap travel tripod on Amazon that will do the job of a long exposure in St Marks Square and last quite a while because it gets little use.

STRENGTH – If is isn't sturdy it isn't fit for purpose and a waste of money. This really should be priority. Overall weight it will hold isn't a good indicator either, a tripod that can hold 20kg may vibrate with just a breath of wind. Wind and running water are the enemy and legs that are not stiff will vibrate with the slightest movement transferring through to the camera. Number of leg sections also make it weaker, so less is better though it impacts the minimum length. When travelling ball heads and columns can be removed so the length never bothers me too much. Also the more leg sections the thinner the last leg section will be. I would avoid any tripod with leg sections less than 15mm diameter, they will vibrate like a guitar string.

ARCA SWISS COMPATIBLE – The top plate should be Arca Swiss type, a wedge shape, which opens up availability of tripod plates and brackets. Some brands like Manfrotto make the plates generic to their accessories, so if you want an L Bracket you have to pay for one of theirs, and you do pay though the nose.

1) BENRO MACH3 37C Although I have a Gitzo Systematic I much prefer the Benro, in fact this is as near a perfect tripod for general use I have found. It has a height of 138cm and will extend 163cm with the column. The column can be replaced with a short column (included) for getting very low, it is very sturdy with the lower leg section being 25mm diameter, and Benro supply superb bags with their tripods. The Mach3 comes with tools and ground spikes too which I always use. At 1.7kg it really isn't a great deal more than some travel tripods so for the strength and reliability of it I really cannot fault it. Leg locks too are a nice size and easy to grip, I can undo both on each leg at the same time with a short twist. Beware of some leg locks which have a rubber outer sleeve, they can slip when they get wet meaning you cannot grip them.

The Benro G2 Ball-Head is one of the two very best engineered ball-heads I have ever used, the other being Gitzo. It is quality engineering. A large knob which has a friction control in the end is easy to grip and requires only very gentle pressure to lock solid unlike some which practically need a wrench. I avoid any that have right-angle levers, they are too easy to snag a coat sleeve on and undo.

A knob at the back allows the base to rotate and it is Arca Swiss Compatible. The GD3WH3 Geared Head is very good too with precise controls and a quick release function for making fast adjustments. Gear Heads are great for making very precise adjustments and I do use the geared head although I have to admit I am quite happy with a ball-head, it is lighter and less bulky.
Benro Website – Shop around because you'll find better prices.

2) GITZO S2 MOUNTAINEER A superb tripod and so it should be for the eye watering cost of it, but I found one believe it or not on Amazon with over a third off. This is a cross between a general purpose and a travel tripod. At only 1.6 kg including the very solid ball-head it is very good and has a max height of 176cm including the column. Despite being a 4 section tripod the last leg is 15mm diameter so it is strong and doesn't flex. One of the best features is the quick release plate just under the ball-head; twist it and the centre column can be removed leaving a short column for very low level shooting.

Whist this is a Rolls-Royce tripod with the price of the ball-head being around £300 I paid around £150 for the legs which was a bargain. Hunt around and you will be surprised what you may find.
Benro also make very good travel tripods as do Three-Legged Thing, but those colours! Yuk. I only include the Mountaineer as an example of the quality to look for, just because a tripod is compact doesn't mean it should be inferior. Compromise on quality and you may as well not bother. A good tripod should last a long long time.
The Gitzo GH1382QD Ball-Head is a marvel of engineering with similar qualities of the Benro G2, just to emphasise that the tripod head needs to be considered carefully. I've had cheap ball-heads fail on me or ended up having to tighten them so much they were a pain to use. Gitzo Website

K&F TRIPODS

For more budget friendly tripods including aluminium and carbon fibre you really cannot beat K&F. I use this model the KF09 aluminium 170cm. It has centre column which rotates horizontally and it can be reversed making it great for getting low. I use it for macro fungi images in the woods and use additional clamps to fit lights. For around £100 including the ball head it is very good value. Check out the carbon models too for something lighter.

K&F Website

FILTERS

If you studied my website it will be no surprise that I use Nisi filters being an Ambassador and a stockist, and you will find a great deal of information about them on the relevant pages. But what are the benefit of using filters? Filters are used for two main purposes, balancing exposure and lengthening exposure.

1) NISI V7 FILTER HOLDER

Comprising an adapter ring and step rings on the rear for different lens sizes the V7 includes a 100mm filter frame and a polariser. Polarisers are essential for landscape photography to remove reflected light from foliage and water, and for saturating colour although care must be used with wide lenses. Although some other filter sizes are available such as 75mm they will not suit wide lenses such as the 8-25 so you are better to use 100mm. The V7 is a great piece of equipment, and whilst circular filters are also available with less bulk you cannot use graduated filters. More flexibility is provided with a slot in system.

2) ND FILTERS ND filters are a solid tone and reduce the light entering the lens, thus extending the shutter speed to create long exposure images. With the OM-1 having up to 6 stops built in a 10 stop is useful to have for longer exposures. A 3 or 6 stop is also useful to extend the built in ND, use an external 3 stop with the built in ND's but remember when using Live ND the maximum shutter speed is 60 seconds.

3) GRADUATED FILTERS A graduated filter will bring the exposure of bright skies down enabling the camera to better capture the dynamic range in a scene. At the same time as reducing the brightness of a sky the ground will also reveal more detail because the camera is not being dazzled, just as graduated sunglasses help us see the ground in front of use. Graduated filters are available in different strengths for 1 to 5 stops and different graduations, soft, hard, medium and reverse. The most useful filter to have I think is a 3 stop Medium Graduated, it will serve you well for just about all scenes and a kit of other filters such as a soft can be added as and when needed.

More Information

L BRACKETS

For me personally an L Bracket is essential. They replace a standard tripod plate with and L shaped bracket making composition for portrait orientation much faster. I shoot many images in portrait, I'm fond of how a viewer's eye can be drawn into in image this way. It is always such a faff altering ball-head and even more so a three-way head, and it means the camera is off the tripod centre of gravity, not a good idea. Composition is maintained with only minimum adjustments needed between landscape and portrait too.

REALLY RIGHT STUFF

The very best L Bracket made for the E-M1 MK 2 and 3 is the really Right Stuff bracket. Beautifully engineered, with rounded edges, a vertical section which can extend out and a magnetic Allen key hidden in the base it really is the very best, but so it should be for approx £250.

Sadly at the time of writing no L Brackets have been released yet for the OM-1 ALTHOUGH RRS they will be releasing one. There has been a rumour they are awaiting an OM-1 to start the design so we will see. There are a multitude of standard L Brackets available, cheap generic models and some designed for specific cameras.

Really Right Stuff

Three Legged Thing produce the Ellie which may suit you. For me these do not cut it, full width brackets have lips on them designed to fit the camera base, and the RRS bracket has a pin which locates into the hole on the camera base where the Olympus Battery Grip also has a pin which locates into it. The lips and the pin are designed to stop the bracket twisting sideways, something standard L Brackets always do because they rely on just the bottom screw and a bit of rubber.

DIY JOB The first image is a cheap Amazon bracket for the E-M1 MK2 which almost fits. The thin metal bar obstructs the battery door, so I cut it off with a hack saw. The lips do not fit the body because the OM-1 is slightly bigger but it is aluminium so they were no trouble to remove with a file. A coat of black spray paint and I'm quite happy with it until specific brackets are available.

If you want to have a go there's a link for it below or search EM-1 MK3 L Bracket.

L Bracket Amazon – Three Legged Thing Ellie Short

RELEASES & TRIGGERS

You need a cable release, you really do, no two ways about it. Many functions such as Long Exposures and High Res may suffer from vibration when pressing the shutter manually, and some features such as bracketing do not allow the Self Timer to be enabled. The Olympus I.O. App can be used to pair with your mobile and it works very well, not only can you download images but you also get a Live View too.

OLYMPUS IMAGE SHARE

The Olympus Image Share App can be used as a wireless trigger and for downloading images to your mobile too. It does the job very well indeed and the best feature is a live view of your camera screen on your mobile. Great if you want to be in the shot. It does have limitations, it only uses standard shooting modes and it cannot access your Custom Modes, connection distance can also be sketchy sometimes. It is worth trying though.

WIRED CABLE RELEASES

My preferred option, the image is a Pixel remote from Amazon costing £8. Wired releases are nothing more than a cable with an electrical contact button on the end so I see no reason to pay £50 for OEM releases. I tend to buy two at a time because I lose them. There are plenty available with different brand names, just look for any with a Canon E3 jack which is the same as Olympus.

View on Amazon

HANNEL GIGA T PRO II

The Giga T Pro has been around a long time now and is half the price it used to be, around £30. Although the built in intervalometer is a little redundant because the OM1 also has it built in (Interval Shooting), it is a very reliable and easy to set up wireless trigger with a long range too of 100m. The transmitter fits to the hot-shoe and connects to the camera via an E3 cable. The cable can be connected to the trigger to use as a standard wired release. Other cables are available for different cameras too. I have one of these but prefer the Pluto because only one battery is needed.

View on Amazon

PLUTO WIRELESS TRIGGER

The king of wireless triggers, and compatible with a huge range of cameras via suitable cables. The transmitter unit is rechargeable which is very convenient. Operated by a phone App there is little this little thing cannot do which makes it ideal to use for multiple cameras. Some features may be a little redundant because of the OM1 features, like shooting lightning with Live Comp. But this device will trigger a shot when it sees lightning. It can bracket up to 19 shots, shoot star trails, trigger a shot by sound, or by the included laser beam, run time-lapses and a host of other features, too many to mention. It isn't cheap at around £120.

Pluto Website – View on Amazon

PEAK DESIGN CAMERA STRAP

Camera straps are a pain when using a tripod, they get in the way and flap about in the wind causing vibration. The Peak Design Slide strap solves that with strong anchors that are attached to the body (they are strong!) and a strap with very easy to use quick release buckles.

View On Amazon

INIU POWER BANK

With the OM-1 having the ability to charge batteries in camera a power bank is a no brainer. The INIU is compact, 20,000mAh and 22.5w meaning it has plenty of capacity with x2 USB 3 and 1 USB C ports. The USB C port is in/out so it can be charged and also charge from the same port. An LCD screen shows power and it also has a torch too. Power packs must be PD to power the camera which this is. There is another version which charges slightly faster but is lower capacity at 10,000mAh, so this is the better option. It charged a depleted OM-1 battery in camera in about 2.5hrs, around the same as a mains charger.

View On Amazon

QUNTIS MONITOR LAMP

The best accessory I've ever bought for my computer, a 40cm LED strip light. It simply clamps to the top of my monitor and with directional light it illuminates the desk and not the screen so I can see my keyboard. It uses no power being LED, it has manual brightness or auto sensors and colour temperature can be adjusted. At around £30 its also £100 less than the very similar BenQ monitor light.

View On Amazon

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View On Amazon

TORCHES

It goes without saying being able to see at night is essential, these are my two favourite accessories for being able to light my way when out after dark.

NEBO TORCHY 2K

My favourite LED torch because its so small at only 10cm long, and it packs power at 2000 lumens. Brightness is adjustable but it doesn't have adjustable beam which for me doesn't matter, I want something small to fit in a pocket without bulk with a wide bright beam. This does the job well and it is rechargeable so no more messing with batteries. Also weather sealed and still worked when I dropped it in a stream.

View on Amazon

LED LENSER HEAD TORCH

LED and rechargeable, handy when you have a battery pack, it will last quite a few uses between charges and my experience is it has never lost charge when not in use. At 220 lumens it's very bright for a head torch, light weight and has an adjustable beam width, adjustable angle and also adjustable brightness levels. For night photography it also has a red light mode to reduce glare. All pretty much standard these days but Lensers do have a good build quality and reputation.

View on Amazon

GORILLAPOD & PANEL LIGHT

JOBY GORILLAPOD 5K

There are quite a few bendy tripods available these days but the Joby is still the original and best. Useful because they are so small and light and easily fit into a backpack side pocket, and they are great for getting really low or for wrapping around tree trunks, walls and fences etc. I use one for my 'Glowing Shrooms' series of images when I want an additional support for a panel light, torch or Macro lights like the Adaptalux below.
The 1K is around £30, the 3K £50 but it is worth going for the 5K for £20 more because the ball-head is far better and it is Arca Swiss so a standard tripod plate will fit as will an L Bracket. I had the 3K but ended up buying the ball-head separately for the Arca compatibility.
View on Amazon

PIXEL G1S LED PANEL LIGHT

The Pixel Panel Light is a small unit about the same size as a mobile phone at 12cm. I use one when I want to add a little background ambient light to Macro images ('Glowing Shrooms' again). Along with white it has a full spectrum of RBG colours and brightness can be adjusted from the full 1500 lux to 0. The best feature of they unit is the build, with an aluminium case, easy to use wheel controls and a metal swivel base for angling it out. It also has a hotshot adapter and a small ball-head for more flexibility.
View on Amazon

MACRO

NISI MACRO RAIL

Incredibly well engineered the NiSi Macro Rail solves the problem of making minute adjustments in Macro photography. An Arca Swiss compatible rail with removable table top feet has a tripod plate which can be adjusted by a mechanical screw thread. Make minute adjustments with the rear thumb screw or for bigger adjustments pull the lever out to wind the mechanism faster. The top plate can also be rotated a full 360 degrees.

More Information

NISI CLOSE UP LENS

The Nisi Close Up Lens does exactly as the name suggests, giving a closer focus distance to longer lenses which do not focus very close and can provide up to almost 1:1 magnification. Designed for longer lenses such as 70-200mm (Full Frame) it is suitable for the Olympus 12-100 at around 50mm and over, and lenses longer than this. With a 77mm rear thread a 67 and 72mm step ring are also included and other threads can be accommodated with a suitable step up ring.

More Information

BRACKETS

I've included these simply because it's surprising how many people ask what I use when they see me posting Behind The Scenes images on Social Media.

PULUZ ARTICULATED BRACKET

It's amazing just how useful these are. With a 1/4 thread at the top anything that has a tripod bush on the base can be mounted to it and then clamped to anything. I used it for mounting a Go-Pro to the tripod leg for doing a time-lapse. I soon realised Go-Pros are not for me, for doing a Behind The Scenes or a time-lapse my phone does the job, so I just mount the phone bracket to it. As long as I'm steady I can carry on using the camera too because I'm not using the hot-shoe. It has also been useful to attach a manual light to a tripod leg too. The odd looking arm is actually a bonus because it will angle in just about any direction. It can be extended with longer arms too and for around £15 it really is a great accessory.

View on Amazon

ULANZI PHONE BRACKET

Useful for hands free video or time-lapses from a mobile there are so many of these around now. I do like this one because it is light but strong, it rotates and the base is articulated so I can angle it. The base has a hot-shoe foot but also a 1/4 tripod bush so I can mount it to anything, the Puluz bracket or even a standard tripod plate.

View on Amazon

REVISIONS

1 October 2022

Error on Exposure Triangle Diagram Corrected.

Blank Page Removed

Phil Norton is an experience professional photographer who has been using Olympus cameras since the original Analogue OM-1 and the Digital m43 E-M10.

He has built up quite a reputation for his images and knowledge of the Olympus system and runs workshops across the UK.

For more information please visit:

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