

# Graham's Photoblog Newsletter

For Week Ending 15<sup>th</sup> October 2021



Well it has been a while since I last wrote a newsletter. Time seems to be passing at an accelerated rate or am I just slowing down at doing the things that I do routinely? Many things have arrive to create a “perfect storm” and my “free” time just disappeared. At times I felt just like the old mountain goat captured in Wales on a day visit to Llandudno.

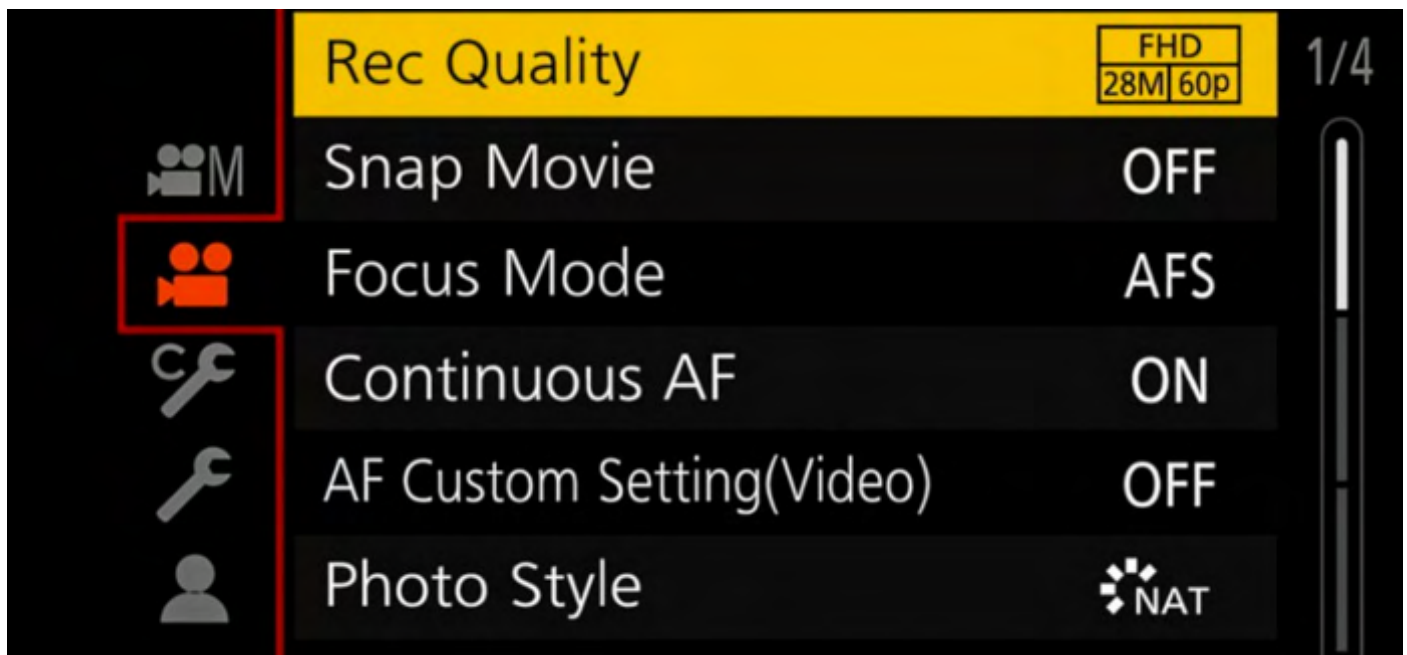
I did demolish one of our old garden sheds and build the one shown above. It was supplied unfinished and in “flat pack” form so I had to paint both the inside and outside with suitable wood finish before assembly as I reckoned it was easier for me to do it that way. There were quite a few issues with it which required several telephone conversations with the supplier to get the right components sent as there were several that were obviously from a different design and some of the components were poor quality. It wasn't a cheap summerhouse by any means however some of the attention to where the structure had been nailed together left a little to be desired as some nails had missed their intended fixing points an split some of the cladding.

From a distance it looks great however if you “pixel peep” you can see some of the flaws. As I use it for storage I decided to apply mirror film to all the toughened glass windows so it is impossible to see the contents! Having said all that we have ordered another one to replace the other shed which is sited at the other side of the garden. It is due for delivery in early November. In the meantime I will have to carefully disassemble the existing shed, an octagonal 7x7 foot unit and then re-install it at my daughters as they want it to store the children's bikes and scooters etc. Another busy month ahead!

## Product Reviews

I have been really lucky to have been approached by several suppliers from Amazon to do reviews of their products. Some of them were not photographic and therefore I rejected those directly. I am obviously flattered that some of the large names should actually reach out to me as I do not have a massive YouTube or social media presence. It is actually quite an intensive process to evaluate and then record a review. I always make it clear that I only accept products for review with the understanding that I have freedom to report on the product exactly as I find it. I will not “gloss over” any areas that fall into areas that might be health and safety issues, performances that do not match the advertised product specifications and operational issues which might be less than idea for the end user. All the companies that I dealt with have been quite supportive in this respect. These reviews do take more time than I can afford at the moment – especially as quite a few of them arrived at the same time. I have decided to scale back on the number of reviews if I do get asked again. One of the suppliers actually send me two of the same product, the YC Onion Lasagne teleprompter, one to review and the other to “give away”. I ran a promotion but as yet the winner has not responded to the email which says that he has won it. The competition closed on the 30<sup>th</sup> September so if the prize is not claimed by the publication of this newsletter I will pick another name from the list of entrants.

I have a lens to give away shortly which will feature in an upcoming review when it arrives from China.



If you are new to video you might find there are a lot of items to control and choose from in the Recording Quality menu, and it may not be entirely clear what they all mean. This is a quick guide to understanding this part of the menu. Hopefully it will give you a grounding that you can build on with further reading as you advance.

When you select the Rec Quality menu item on the first page of the Video Menu you'll be faced with a wide selection of options that will have varying degrees of impact on the way your recording looks or plays back, so it's important that you have some idea of what the significance of each element of the menu is.

I'll take a look at the Panasonic FZ80/82 menu as an example.



Recording Quality offers two options and most other Panasonic Lumix cameras often offer the same range of format choices, including MP4 and AVCHD. MP4 is now widely preferred as the one to use, and is the only choice for 4K recording. In this model we also have the chance to record 'pixel-to-pixel' – which means the area that is used is determined by the number of pixels in the resolution selected. So in 4K mode we'd use only 3840x2160 pixels of the 4896 x 3672-pixel sensor, and in FHD mode we'd use scaled down sensor image to a 1920x1080-pixel area. In the 4K mode this means each recording pixel is directly represented in the final output – and the extra cropping of the sensor area will make our lenses seem longer, which is great when you need a bit more focal length for a distant subject however for landscape videographers this is bad news.

In the AVCHD mode we can have a choice of progressive or interlaced scan. The 'p' in the progressive options like, for example, 25p stands for 'progressive', which means in the video all recorded lines of pixels are displayed at the same time.

The alternative is 'i' for 'interlaced'. In interlaced video every other line is played in sequence – all odd numbered lines followed by all even numbered lines. For this to be effective the overall frame rate needs to be high so that the picture doesn't flicker. Interlaced video is usually recorded at 50i.

Mbps stands for 'megabits per second', and is an expression of the rate that data created is streamed to your memory card. Higher resolution settings generally (but not always) create more data, as do higher colour settings, better audio and less compression.

This 100Mbps rate is quite standard and most memory cards will be able to cope well, but higher rates in other cameras can go up to 200Mbps so you'll need to ensure your memory card can deal with that much being fired at it – most good modern cards will. Cameras such as the GH5s though can generate 400Mbps, which requires top-end memory cards to allow the camera to continue recording beyond a few seconds.

In some camera we do get an option to set the other parameters such as all-I. There's a lot of information here, but basically we are looking at the colour and compression settings – which all have an impact on the data rate.

You might have heard mention 4:2:2 or 4:2:0 and this refers to the colour sampling rate and lets us know that in this setting two pixels in every group of four will copy the colour information from the other two in the group to save space on your memory card. This sounds like a dramatic loss of information, but it actually still presents very accurate and detailed colour – and represents the best you can expect unless you are prepared to invest in a higher specification cinema camera.

The standard 4:2:0 is also still very good, and even though only one pixel in the group of four records colour information it will give most of us more than enough colour resolution.

More important is the bit-depth of that colour. Most cameras work with 8-bit colour but some can manage 10-bit, which lends us a lot more flexibility when it comes to post-production manipulation and an ability to record a wide brightness range without losing colour information.

Bit depth refers to the number of brightness levels each of the red, green and blue pixels can record. In 8-bit recordings each pixel can register 256 different levels of brightness, while in 10-bit each pixel can record 1024 levels, so 10-bit is much more likely to produce smooth tonal gradations and to allow more dramatic contrast adjustments in processing.

This will be most evident should you apply post processing to your footage as shifts in contrast could introduce tonal or colour banding more quickly in an 8-bit recording. A 10-bit recording is also much more likely to be able to register detail in high contrast scenes without shadows blocking up and highlights burning out as it should have a wider dynamic range.

Particularly in cameras like the Canon EOS M50 and the EOS M6 we have options for setting something called Long GOP. Here with this compression, the standard Long GOP method looks at a sequence of frames (GOP stands for Group Of Pictures) and saves only what is changing in them – recording anything that stays the same only once across the series.

This means there's no need to keep saving unchanged elements in the scene when they remain the same.

This compression is capable of creating smaller files but more importantly lower data rates. The other Canon compression method is All-Intra, which is shown as 'All-I'.

This is a high-end requirement and requires powerful computers to process the footage. In All-Intra each frame is compressed individually so footage should be cleaner but data rates are much higher – usually up to 400Mbps.

Probably worth a mention that hand held video often results in lower than expected video quality as the elements in the scene are constantly changing and the expected bit rate is easily exceeded so as a result the compression is increased in order to provide the output rate.

The detail in the video becomes far more "blocky" with a pronounced lack of sharpness. If you hold the camera very still you will see the increase in sharpness. Pan slightly and you will see the immediate sharpness loss.



**Advise for Sales Pictures**

I was asked by Lorita Cohen for some advice on photographing her dolls which she sells using an online facility

<https://www.rubylane.com/shop/lorita-cohen-antique-dolls>

Lorita uses her Panasonic Lumix FZ80, handheld, to capture her images using natural light.



This is an example of the image quality that Lorita has managed to achieve so far but admits some image come out "horrible".

Looking at the image EXIF it was shot at F2.8 and ISO 500 1/60 sec in Portrait mode and the lens was at 20mm EFL.

Although the image looks acceptable when you look at it closely you can see lots of JPEG artefacts and noise.

It's also very obvious by looking at the images on her store front that she spends a great deal of time setting up her articles that she has for sale - there is a great amount of attention to detail.

I think that the image quality could be improved in a couple of ways. The first would be to switch from hand held shots to tripod based shots. This would allow the use of a lower ISO, preferably ISO 80, and would improve the contrast, reduce noise and improve the highlight to shadow ratio (dynamic range).

If the tripod option is not possible then using the SCN Mode 17 (handheld nite shot) which captures 5 images and then does a noise reduction image stacking operation to produce a single image which much reduced noise.

A final option would be to use a large soft box to replace the window light and use a fill in reflector to further reduce any shadow contrast. I'm looking forward to seeing if Lorita's images improve when she has adapted the advised method of shooting.

### **What are the Best Settings For ...**

I do get a lot of requests for how I would set up a camera to shoot a specific type of shot, usually holidays or special occasions.

My usual answer is that the only decisions that have to be made will be largely driven by the nature of the subject.

Exposure is really only the sum of Shutter Speed, Aperture and ISO, forget all the other in-camera processing that can be applied to the JPEG like i.Resolution and i.HDR etc., as they will not affect the image exposure.

If you consider this more closely then in most cases you can rule out ISO as it is always preferable to keep this at the lowest camera setting to reduce noise. So that leaves a clear choice between Shutter Speed and Aperture.

Unless you are shooting sports images or any scene in which the subject is likely to move quickly such as with bees, butterflies and other insects then I would tend to suggest that Aperture priority is the way to go.

If you decide on this path then the choice of aperture setting will to some degree, depending on the camera type, affect the amount of depth of field – the amount of sharpness between the foreground and the background in the image. Keeping the aperture towards the widest setting (F2.8- F4) will allow more light to reach the sensor and result in a shorter shutter speed. This combination will result in lower noise in the image. The smaller the camera sensor the more that this is to keep in mind.

Remember that the smaller sensor in the FZ200/300/330/FZ80/FZ82 and the travel zooms below the TZ100 all have only the 1-2/3 inch sensor and even at f2.8 have the equivalent depth of field as f11 on a full frame camera given the same focal length setting so don't be worried about lack of depth of field.

A lot of effort is made by photographers, who should know better, to recommend settings like F11 or F16 for landscape shots. Whilst this is true of full frame cameras it does not apply to the bridge camera range where F2.8 in the smaller sensor and F5.6 in the type 1 inch sensor of the FZ1000 and the FZ2000/2500 will yield exactly the same results.

Only if the light is bright should you consider stopping down 1 stop (2 at most) to improve edge definition as the laws of physics and aperture diffraction will then come into play resulting in softer images. As you half depress the shutter button just take note of the camera shutter speed. If you see that it is longer than the reciprocal of the lens focal length plus 2 stops then you may need to raise the ISO in that situation.

As an example pressing the shutter button half way down shows 1/30 at F4 with ISO 125 and my zoom is set to 400mm. Unless you physically support the camera by leaning against something solid such as a wall or fence post then it's likely that you will get camera shake. OIS will give you a couple of stops advantage so that would effectively give you a shutter speed increase from 1/30 to 1/125<sup>th</sup> but this would still be too slow for the 400mm focal length where at least 1/500 sec would be preferable. In this case it would be necessary to move the ISO from 125 to ISO 400 in order to achieve the correct shutter speed and reduce the change of camera shake.

This does also reduce the chances of any movement in the subject also affecting your image sharpness.



Here are some examples that I shot with the FZ80/82 using a magazine print as the target and at 8 feet away.



**1/200**      **400mm EFL**  
**ISO 80**

# oy and the art of ural family photo



● THERE'S A REAL ART TO TAKING family portraits that are natural-looking and yet guaranteed to include all of the elements that a picky client will insist on having. Alexa Loy has made a career out of juggling all of the tricky problems that family portraiture can throw at her.

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The first image is a 1/3 crop of the image and is within 1 stop of the reciprocal focal length. It looks reasonably sharp however compare that to the next image taken at 1/500 sec by raising the ISO to 200





**1/500** **400mm EFL**  
**ISO 200**

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By raising the ISO to 200 I could push the shutter speed to faster than the reciprocal focal length yielding a much sharper image notwithstanding the slight increase in image noise as a result. In the last image in this sequence even though the shutter speed is now 1/1000 sec by raising the ISO to 400 you will see a reduction in image sharpness due to the increase in image noise.





**1/1000**

**400mm EFL**

**ISO 400**

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The image noise at ISO 400 has produced a softer image (look at the ink dots in the coloured picture) So it's good to know your limit for hand held shutter speed so as not to raise ISO unnecessarily.





**1/500** 600mm EFL  
**ISO 400**

ov and the art

Increasing the focal length now to 600mm the recommendation is to use 1/600 or faster. In order to achieve the shutter speed I needed to increase my ISO to 400 (as the aperture decreases with focal length in the FZ80/82) At this shutter speed the dot pattern in the coloured image looks acceptable here. Comparing that to 1/1000 sec at ISO 800 in the next image you will see again that the ISO noise has effectively softened the image so we have gained nothing by using too high a shutter speed for this situation.



**1/1000** 600mm EFL  
**ISO 800**

ov and the art





If you look at the final image you will see that I have achieved a very sharp shot at ISO 80 and a shutter speed of 1/250 which is 2 stops below the theoretical speed that should be used at this focal length. I think that this goes to show that a good firm camera holding technique plus the benefits of OIS are needed to gain maximum sharpness in the images that you capture – don't just rely on the OIS to reduce your camera shake it is worth looking at your technique for hand held shot. I use the Pistol shooters grip when I shoot hand held.







So after much deliberation I finally decide to purchase the iPhone 13 Pro as a replacement/addition to my iPhone 12Pro Max.

I decided against the Pro Max as I find the additional screen size a little awkward when trying to fit it on gimbals etc. Since the camera modules, which to me are the most important feature, are the same on the Pro as the Pro Max version I was happy with the compromise.

The camera systems on the iPhone 13 Pro and the 13 Pro Max are identical, which means you don't have to buy the bigger and more expensive phone to get the best photos and I do mean best photos because there isn't another phone on the market that can match the iPhone 13 Pro, at the moment.

In bright sunlight or normal light, the pictures these phones take are very hard to distinguish from the iPhone 13 base model or even the iPhone 12. It has to be said though that in good lighting, almost any high-end smartphone is very competent at producing decent images these days (if not a little over sharpened).

Where the Pro 13 camera system is supposed to shine is in its low light capability. The main wide-angle sensor has seen an upgrade this year. Unlike Android phones that are chasing big megapixel counts and then "pixel binning" to achieve low light performance, Apple is sticking with the lower count of 12 megapixels, the same resolution it's used since 2015's iPhone 6S.

The sensor itself is much bigger now and features 1.9  $\mu\text{m}$  pixels, which are about as big as anything we've seen on a smartphone. Adding to that, the lens now has an f/1.5 aperture.

I'm looking forward to getting out and about with this and comparing it to the Samsung S21 Ultra which was previously boasted as **THE** smartphone of 2021 and especially testing out the new video mode of cinematic where you can perform focus pulls even though this mode is reserved for 1080p 30fps only.

Is all this Apple Hype or does this phone really deserve to be considered very seriously for everyday photography?



iPhone 13 Pro wide angle lens 1/25 F1.8 @ ISO 1000



iPhone 12 Pro Max wide angle lens 1/33, F2.4 @ ISO 1250





iPhone 13 Pro Main camera 1/25, F1.5 @ ISO 500



iPhone 12 Pro Max main camera 1/25, F1.6 @ ISO 500

At 100% the iPhone 12 Pro Max just clinches it in this shot with a little more apparent sharpness although at the same exposure the iPhone 13 Pro image is overall brighter.





iPhone 13 Pro 1/33, F2.8 @ ISO 1600 78mm EFL



iPhone 12 PRO Max 1/25, F2.2 @ ISO 800 64mm EFL

With the telephoto lens the iPhone 12 Pro Max has a 64mm EFL (x2) whereas the iPhone 13 Pro has a 78mm EFL (x3)

The iPhone 13 Pro looks to have better image quality in this shot.





So this is only one image from the main lens but in this example of a x300% enlargement the iPhone 12 Pro Max has a higher dynamic range and appears to have more sharpness.

In comparison here are some shots from the Samsung Flagship Galaxy S21 Ultra 5G



Samsung Galaxy S21 Ultra Wide angle lens 1/25, F2.2 @ ISO 1250

The ultrawide angle lens in low light shows a lot of blotching and edge distortion. The main lens is perfectly acceptable and so is the telephoto lens at the base x3 magnification.





Samsung Galaxy S21 Ultra Main Lens 1/25, F1.8 @ ISO 640



Samsung Galaxy S21 Ultra Telephoto lens 1/33, F2.4 @ ISO 1600 72mm EFL (x3)

So would it appear that once again Apple has maybe overhyped the low light capability of the iPhone 13 Pro?

I'll do some more controlled tests along with video samples before reaching any conclusions and maybe compare it to the iPhone 6S that I have access to.

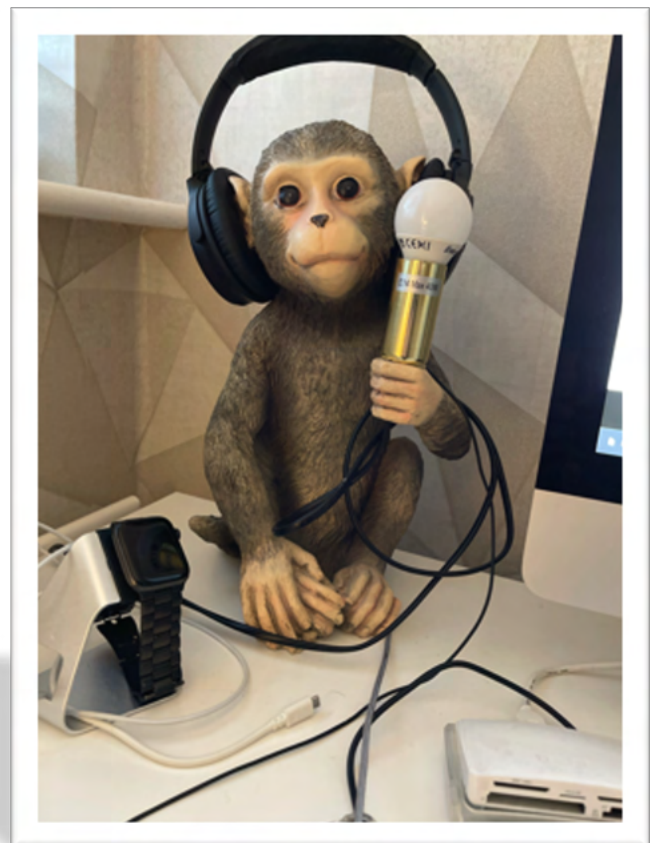
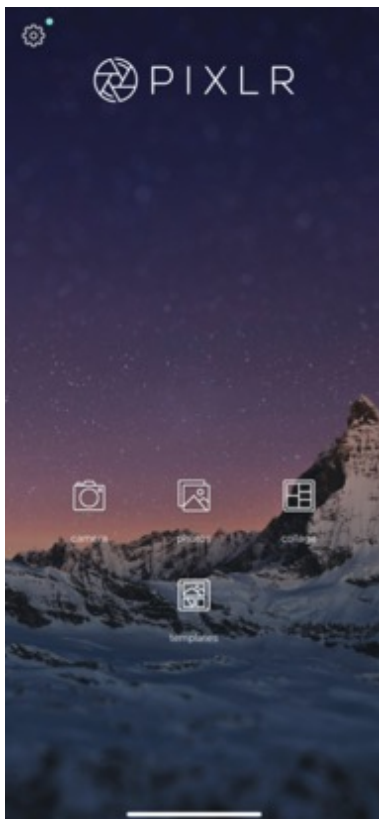


## Halloween Themed Posters



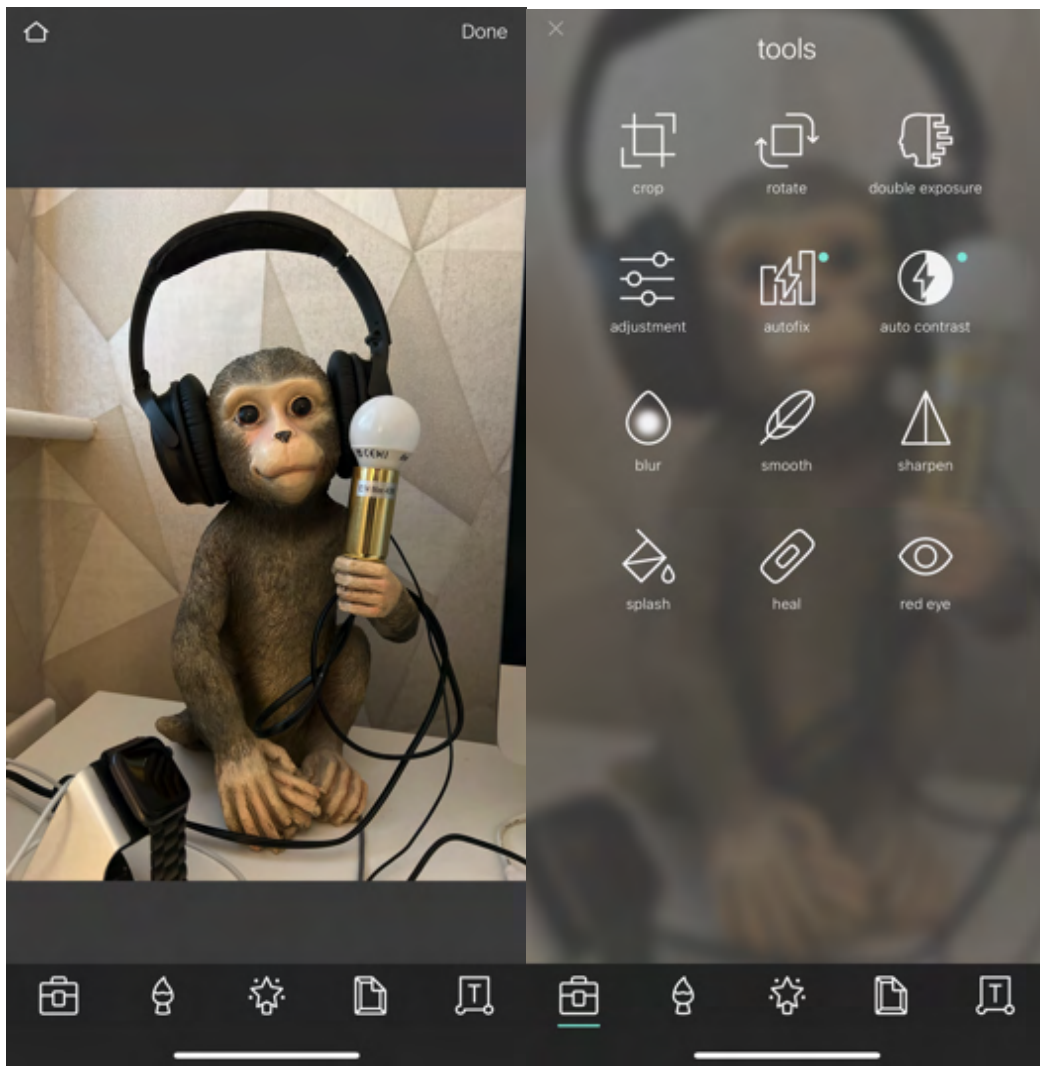
I saw these posters and thought that they were rather amusing – a change from the usual Halloween pictures!

## PIXLR App for Smartphones



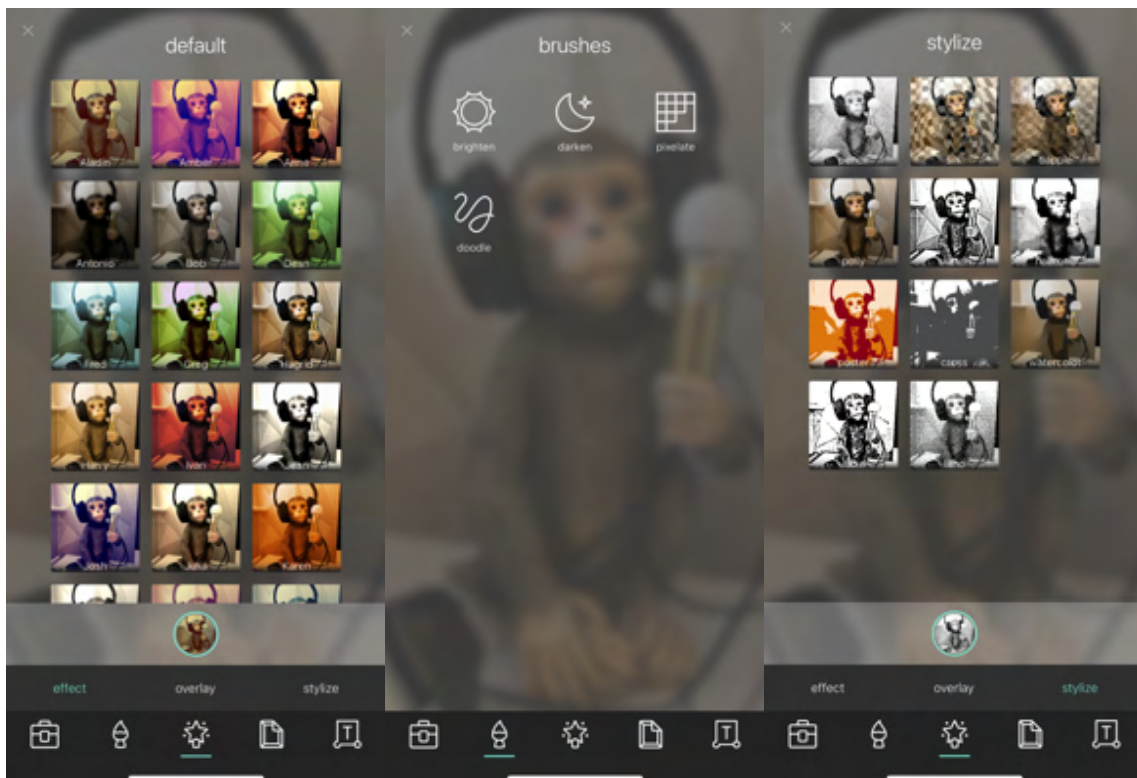
Pixlr is a free image editing app for smartphones (IOS and Android) and I've been using it recently to produce overlays and collages. The user interface is very easy to understand and the results are excellent. You can even open the camera app directly from the app to capture and, if necessary, edit the captured image.

The monkey image was captured using the app.



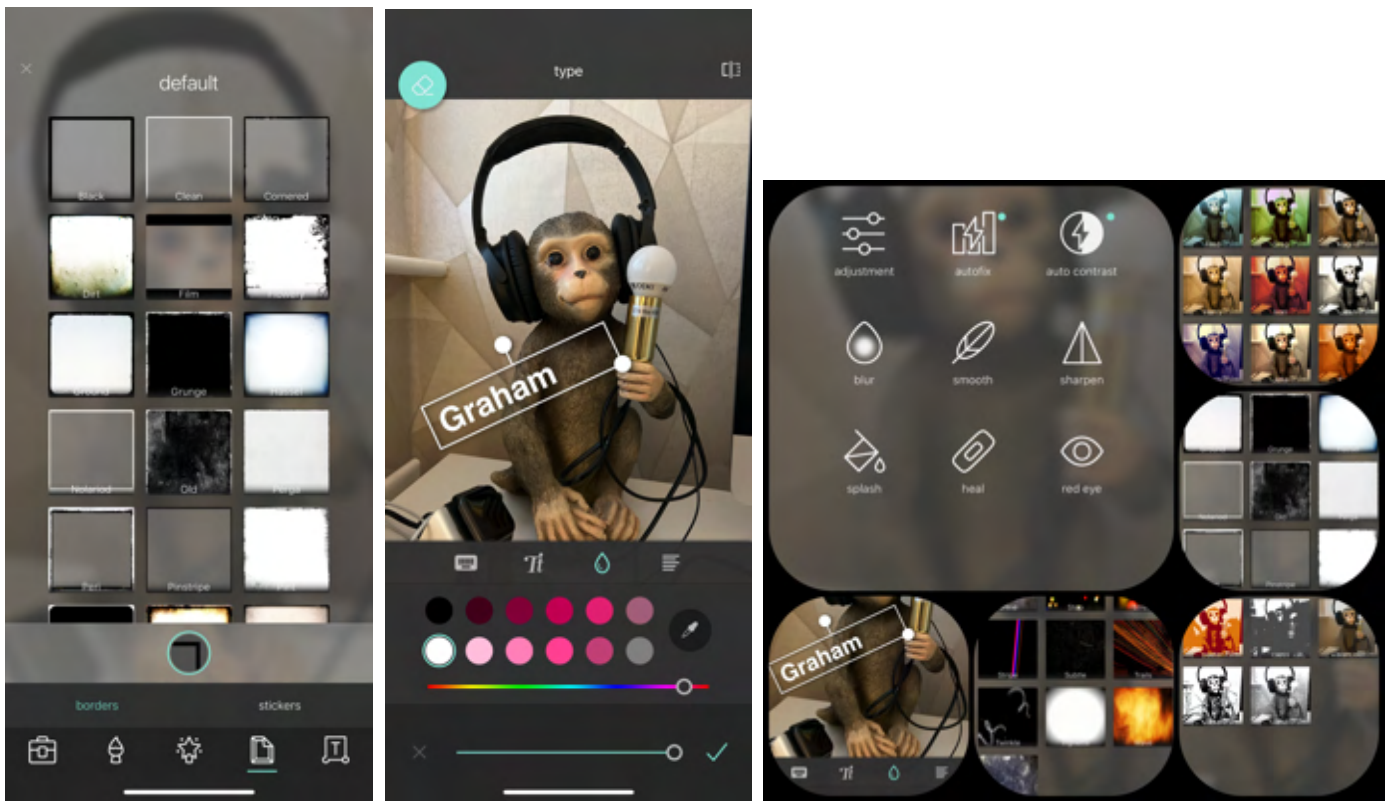
The captured image opened ready for editing

The tool box options



Effects, Brushes and Stylize options





Borders, Text options and collage templates



A completed collage from the app.

## After 14 Years on YouTube is it Time to Say Goodbye?

I started my YouTube channel in 2007 with the intention of trying to help people take better pictures with their digital cameras.

After 27 years with Kodak, many of them spent in a professional environment followed by managing the technical and training centre for service engineers I felt that I had been privileged to acquiring so much photographic knowledge/expertise that I thought that it should not go to waste without at least trying to pass on some of this.

From many hours spent watching customer prints rolling off the massive paper processors in the biggest of the photofinishing labs it was very obvious that a lot of the images could have been improved if the camera user had understood just a little more about the functions of the camera and a few rules of composition. With digital images being so readily acquired there seemed to be few places back then where people could gain the basic knowledge when using digital cameras.

I started with the Panasonic FZ38 and quickly discovered that without some basic understanding of the processing workflow that it would be very easy to only produce mediocre images from that camera. Hence my initial set of tutorials covering the Panasonic bridge cameras. I bought every iteration of the FZ line as it came out and worked hard to begin to understand how to get the best image quality from those cameras. It was only when the FZ200 came out that I proclaimed that this camera would be the “game changing” consumer camera that ordinary photographers would want to purchase.

I was immediately trolled on popular forums like DPreview with many comments stating that I was an idiot and knew nothing about photography!

Millions of cameras sold later I know who the idiots are! Sure the FZ200 had many faults but they were quickly addressed with the FZ300/330 and again Panasonic sold millions of these cameras – many I guess through my promotion.

Now it would appear that Panasonic (as well as Sony) have turned their back on the thriving bridge camera user market to concentrate all their efforts into full frame mirrorless cameras in hope that serious amateurs or professional users will take up the void left by us bridge camera users.

Now that the FZ80/82 is the last of the mass selling cameras in this arena I think that I will have nothing new to offer to existing viewers or subscribers.

Without a radical departure into something entirely different, that is probably being covered by other content creators anyway, I am beginning to feel that it is time to leave the channel. I would have loved to have seen the channel achieve the 100K subscriber count but it looks unlikely now.

From the statistics available all the thousands of views come from casual viewers who do not transition into subscriptions. Subscriber views only count for about 20% of the total views across the channel.

I get lots of requests to do very simple tutorials without going into the technical aspects however I have always wanted to explain why and when to use specific details/menu settings etc as I feel having a good understanding of these help you to take better pictures as you will appreciate the limitations that all digital cameras have and the compromises that need to be made.

So until next month as usual please stay safe and well.

Graham