# My Twin Camera Rigs

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## My Requirements

It has been my experience that most twin camera rigs using interchangeable lens cameras involve compromise and my current rigs are no exception. Given that I have a preference for capturing images with moving subject matter, as a working minimum, I want rigs with cameras where I do not have to worry about synchronisation, auto-focus speed, variant focal point selection, image quality or the weather. I just want to be able to choose my mode, frame my subject matter, achieve focus,and fire the shutter (FFF). Once fired, I don't want either camera to independently dither with all number of computational exposure calculations, simulations, optimisations or refreshing of the rear display before capturing the sensor data. I just want them to capture the data when I trigger the shutter. Just one synchronised high-quality pair on demand. All my frustrations with previous camera pairs laid bare.

In the lead up to that final Frame, Focus and Fire triumvirate; I want the cameras to meaningfully display the settings that each camera has settled on and offer me easy ways to change those settings without having to navigate a complex set of menus, aka a touch screen. After capture I want to review the captured image briefly and return to image capture mode automatically. When I don't want to capture a subsequent image, I want the cameras to quickly power down and yet be ready to wake up instantly when I press the remote. These camera requirements have been continually evolving during my progression through numerous new camera releases that I thought (hoped) might be suitable for pairing. The results were a mixture of pleasing features and sometimes fatal flaws.

## Early Twin Camera Rigs

My first twin rig was a pair of Canon EOS 1100D's with 12MP APS-Csensors, 9 focus points and a Digic 4 processor. They were somewhat bulky and suffered from unpredictable episodes where either one or both lenses went off into auto-focus dystopia whilst my subject matter moved on. Next was a pair of Canon EOS 1200D's with 18MP APS-C sensors,still 9 focus point sand a Digic 4 processor. My daughter Sarah still uses this rig. Touch screen control arrived with the smaller Canon EOS M compact mirrorless camera. It had 18MP APS-C sensors, 31 focus points, a Digic 5 processor but unreliable sync via a dual infra-red remote trigger. Next was the Canon EOS M3 with 24MP APS-C sensors, 49 focus points, Digic 6 processor and SDM compatibility. I still had issues with the sync with moving subjects and it was some years after retiring that pair that I uncovered that one camera had a 3.2 millisecond lag from the other which could be compensated for by adding a delay to the faster camera in the SDM

configuration. My Canon EOS M6 pair was a disappointment, better sensors and a Digic 7 processors, but very unreliable sync. I moved quickly to a pair of Canon EOS M6 II's when they became available. They had 33MP APS-C sensors, 143 focus points, a new Digic 8 processor and fortunately very reliable sync. If you haven't already noticed my consistent reference the processor each camera uses it is because it is directly related to the sync reliability.

## Canon RP & R8

Enter the Canon EOS RP with a full frame 26MP sensor, 4779 focus points, the sync reliable Digic 8 processor and the newer RF lens mount. I started with RF 24-240mm F4-6.3 IS USM lenses but after noticing inter-image variation due to differences in the in-camera distortion auto-correction being applied with some image pairs, I have ended up with the tougher, weather-resistant RF 24-105mm f/4L IS USM lenses as my favourites. When the RP was superseded by the R8 which had a more capable Digic X processor and a better sensor in terms of colour depth, dynamic range and low light performance, I made the change. Fortunately, the sync reliability was equal, if not slightly better, than what I had measured for the RP's.


*Twin Canon RP cameras with superzoom lenses (above) and wide angle lenses (right)*

## Twin Camera Mounting

The other side of any twin camera rigs is the mounting. I had been building my own mounting rigs using aluminium sections and had gone as far as building more intricatevertical mounts for the Canon EOS M6 II which allowed me to obtain an interaxial of 80mm. They M6 II body had a single attachment point on the base and they would sneak out of alignment if I was not careful. The vibration of many longish car trips didn't help. Soon after I started using the RP's I found some custom L brackets online and my bespoke aluminium section rigs sprouted commercial add-ons in the form of panoramic mounts and arca style clamps that gripped the L brackets in either portrait or landscape orientation. The same custom L bracket suit both the RP and the R8 cameras. In the field the panoramic mounts would loosen and move. I eventually added a robust,but easily removable, brace to hold them parallel. In my current R8 rig

*Canon R8 cameras in Portrait (top left), Landscape (top right), and Mixed orientation (left)*

*Bottom: Side and rear views of the Canon R8 twin camera rig.*



*Lone swimmer during an ash filled sunset at Mettam's Pool, North Beach*


*Increasing beach erosion at Bennion Beach, Trigg*

I have retired the panoramic mounts. I eventually found tight fitting L brackets to suit the EOS M6 II's, so currently I have four rigs. My primary R8 rig, my older RP rig with RF 14-35mm f/4L IS USM lenses, a third RP rig with Canon RF 600mm F11 telephoto prime lens, and the older Canon EOS M6 II with Canon EF-M 18-150mm F3.5-6.3 lenses.

With all of my various paired cameras rigs over the years, having easy access to change the batteries in the field without disassembling the rig or removing the cameras is a significant time saver. The same applies to being able to remove the SD card for image download. All the brackets I currently use in my rigs give me unfettered access to swap the batteries and the SD cards. I personally prefer to use high speed UHS-II300MB/s cards to maximise off-camera image download speed.

## Camera Triggering

For all of my current rigs I use wireless remotes employing a single transmitter and either one or two receivers. Whilst I have not encountered any observable sync issues with using two receivers, I have changed to using a single receiver coupled to a wired splitter that incorporates separate leads to each camera for my primary rig.

## Switching Camera Orientation

One issue I did not feel comfortable with was having to disconnect each camera from the mount to change the orientation from portrait to landscape. Each camera and lens combination weighs around 1.2kg (5 times a W3) and could be dropped mid-

*Sheltered Cove at Elephant Rocks, near Greens Pool, Williams Bay National Park*

*Eastern end of Waterfall Beach, Williams Bay National Park*

change if you weren't careful in the field where it can be a three-handed task. Recently I was made aware of the existence of collar mounts for the larger Canon EOS R6 (5mm wider, 12mm taller, and 18mm wider). With some work I as able to combine my existing L bracket (minus the removable shorter side) with the collar mount and can now easily change the orientation from portrait to landscape without having to disassemble anything.

## Camera Support

I don't use a tripod with most of my rigs as I prefer using a 4-stage video monopod that I can extend from anywhere between 70cm to 192 cm. The threaded mounting hole on the base of the rigs is offset forwards by some 40mm so that the camera weight is evenly balanced over the monopod. This allows me to use the monopod as a pseudo vertical and horizontal stabiliser. The arca clamps also have various spirit levels to assist with keeping everything level.

## Battery / Energy Management

All of these cameras use the smaller canon LP-E17 battery which requires me to carry at least two sets of spares in the field even with aggressive use of the available power saving modes. One tip I did discover was that you can extend the battery life by some 40% by putting the R8 cameras in airplane mode. Just disabling the blue-tooth and wireless functions is not enough as they are still consuming power.

I also turn off as many unnecessary functions as possible to aid sync and exposure equality between the cameras. I set the auto-focus to auto-focus area 1 (the inner 20%) and set whole area tracking servo AF on which allows each camera to track moving subjects across the entire screen while the shutter button is half way down.

For me, the R8 rig offers me the best balance of features, size and lens compatibility. The RF 24-105mm f/4L IS USM lenses are above average for everything except macro and vlogging photography types.

## And the Winner is...

The R8 comes with a number of useful features such as the Pre-Shooting Buffer, Focus Bracketing, Dual-Pixel Raw (depth maps in a single shot), Auto-Exposure Bracketing, and a variety of High Dynamic Range modes. The R8 has a new single shoot mode called HDR Moving Subject mode suitable for shooting subjects in motion. Within each shot, images captured across a wide range of exposures are merged. Canon claims this mode can capture additional dynamic range with virtually no ghosting of moving subjects, though it has some limitations (ISO 800 minimum and JPEG file format). This has become my preferred mode in the field where most of my subject matter is moving. The images produced by this new mode have been described as 'over-processed' by reviewers who I would classify as non-HDR practitioners. HDR images, whether captured as exposure bracketed triplets or single as images need further off-camera processing with an HDR application. The same applies with HDR Moving Subject mode images.

Every now I leave my twin rigs at home and I take out only a W3 or a 3D1 on a photo trip. Invariably I return with a refreshed appreciation of why I moved to twin camera rigs.

### 3D Biography

*As a child I grew up surrounded by stereoscopic photographs. My father, his father and his father before him all had the passion. They were active members of the Australian section of the Stereoscopic Society and managed the folios for many decades. But I was a follower not a photographer. A chance discovery of a W3 camera going cheap caught my eye in late 2011 and I bought one as a Christmas present to myself. After taking that first picture on Christmas day, somewhere a long dormant gene switched on and I was soon devouring everything I could discover about digital stereography. It was 3D and only 3D.Whilst my W3 was serviceable, I wanted to create images like those I had viewed so many times in my youth,and by August 2013 I had built my first twin rig. Thereafter it was an iterative journey of constant improvisation and improvement. I made myself promise not to lose sight of keeping it as a passion, never as a chore. My aim simply being to allow others see and enjoy what I saw on the day. The best compliment that I can hear anyone viewing my photographs say is 'that's exactly how I remember it looked'.Real, comfortable and unembellished*