

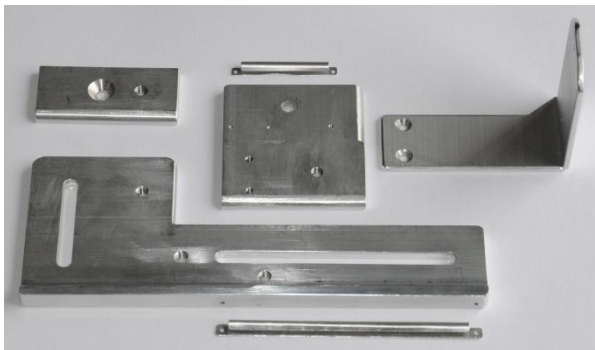
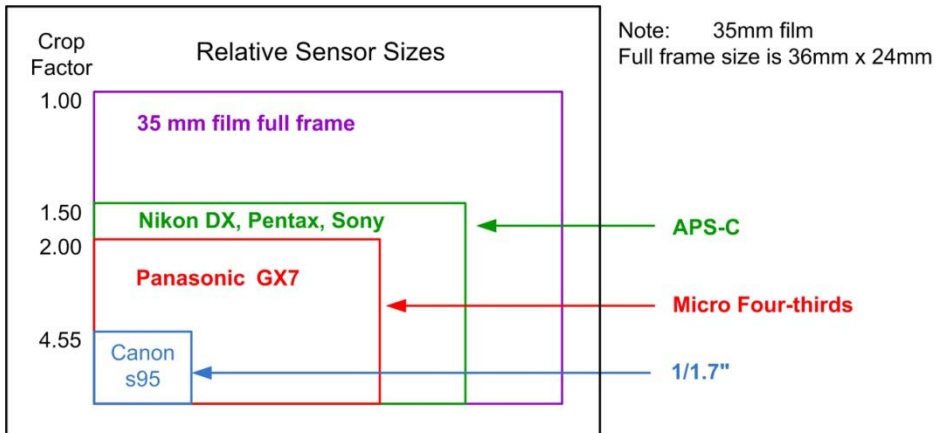
# A Micro Four Thirds 3D rig

by Max Pow, New Zealand

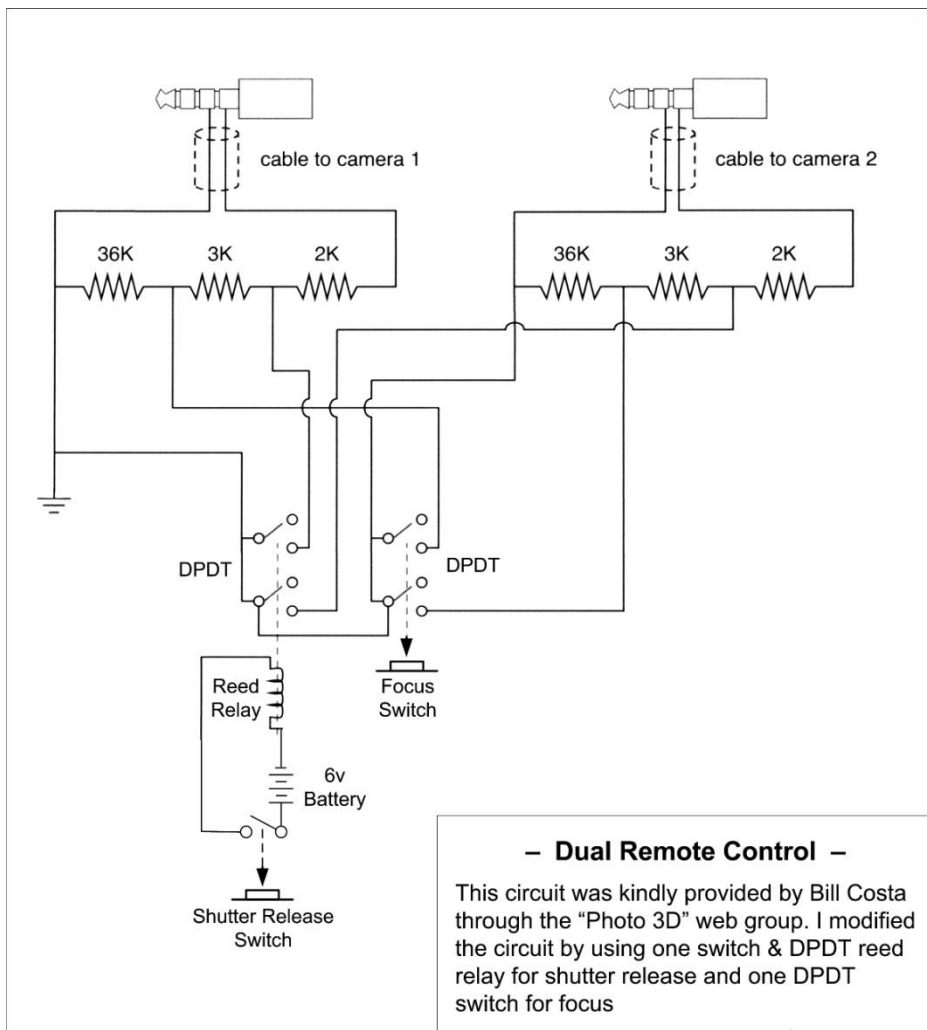
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In 2008 I purchased my first digital 3D camera rig, consisting of a pair of Panasonic TZ3 cameras built by Co van Ekeren. I subsequently developed a desire for improved performance, and started to build successive rigs as cameras improved. This culminated in the Canon s95 rig in 2011. In 2012 I became interested in the Micro Four-thirds digital camera system and towards the end of 2013 I purchased two Panasonic GX7 cameras. They seemed to be ideal for improved quality as the sensor is larger than the point-&-shoot cameras, and a little smaller than APS-C size so depth-of-field was still reasonably okay for 3D imaging, plus the lenses are smaller than APS-C lenses.

Reviews showed that the quality and focus speed were very good and this turned out to be so – the camera is a pleasure to use.



Parts ready for anodising



The sliding bar design is based on an earlier design I built for the Canon s95 rig. It is made from aluminium and anodised black. It took several design changes before I finally decided on the arrangement shown, followed by an awful lot of cutting and filing. Each camera is mounted on a plate and it is this that slides while retaining alignment by a raised edge along the back of the bar. When the left-hand camera is moved forward for aligning with the right camera a marked line on the base-plate helps to position it.

The wooden handle is screwed to the plastic box housing the switches and relay. The lower DPDT (Double Pole Double Throw) switch is for the half-press position where the cameras focus and calculates exposure etc. The upper switch operates a DPDT reed relay and is the full press position firing the two cameras. I did try two DPDT switches first but found double throw switches were not quite together so the full press was replaced with a DPDT reed relay which did improve the sync, but absolute synchronisation still cannot be achieved; having said that, the rig works very well for the 95% of shots that don't have fast motion. Voltage to the 5v reed relay is from a small 6v battery (K28A) housed in the small wooden capsule under the handle. The remote cables pass through aluminium split tubing that allows the cable to be removed if required and keeps the cables tidy.



GX7 rig set to 75mm spacing

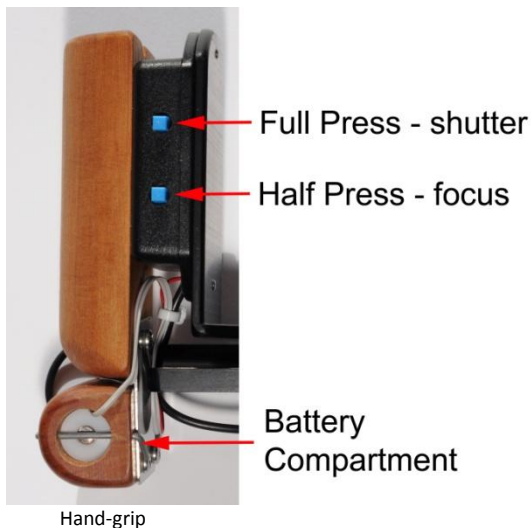
The offset front/back position allows closer spacing – I've used this before and found it to be quite satisfactory as Stereo Photomaker corrects the slight differences between L & R images. This rig adjusts from 75mm to 185mm spacing and once the spacing reaches 130mm the cameras can be aligned.



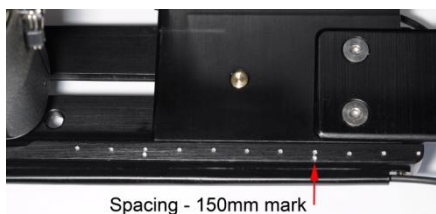
GX7 rig set to 130mm spacing



GX7 rig from behind



The synchronisation was measured when I had two single action reed relays and found to be from 0.56mS to around 15mS. Now that I'm using a DPDT reed relay the sync should be slightly better, but I'm unable to confirm that as my CRT monitor has stopped working!



10mm spaced markings

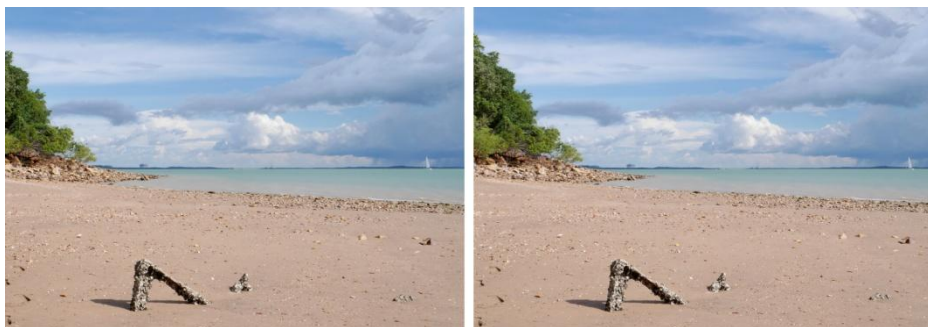


From underneath one can see the slots where the cameras can slide for varying the spacing and allow access to the card & battery compartment.

With the standard kit lenses (14 – 42mm) the rig weighs in at 1.6 Kg.  
It was now time to try it out, so off I went with a friend to Australia to visit the Northern Territory. The rig performed perfectly - despite the Australian flies!



Some images from the trip using the GX7 rig:



Darwin shoreline – Northern Territory





Yellow Water Billabong – Kakadu National Park, Northern Territory



Yellow Water Billabong – Kakadu National Park, Northern Territory



Nourlangie Rock Painting – Kakadu National Park, Northern Territory



View of the Nadab floodplains – Kakadu National Park, Northern Territory



East Alligator River – Kakadu National Park, Northern Territory



Katherine River – Nitmiluk National Park, Northern Territory



Termite Mound – Northern Territory





Alice Springs – Northern Territory



Mt Conner - Northern Territory



Uluru – Northern Territory

