



How was it shot?

With the advent of computer generated imaging, Simon Plant shows how car photography will never be the same again. He describes how this impossible image was made possible.

A LOT of the car photography for above-the-line advertising is being replaced by CGI (computer generated imaging). It was quite a shock when I first saw the quality of this work. It's new technology that's further ahead in America. Two years ago there wasn't much information about it in the UK. I had to experiment and glean information here and there to work out how it is done. When I started out we were pushing things beyond what had been done before.

Unusual locations

I try to choose locations where you're just not going to see a vehicle – in these examples, a truck on the Charles Bridge in Prague and a car in Wookey Hole Caves in Somerset.

For the Charles Bridge image, first I took a traditional picture of the bridge at dawn using

an EOS 1Ds Mark II and an EF 28-70mm f2.8 L USM lens. I selected my angle based on where I imagined the truck would be. There is nothing difficult about this picture – it's simply a landscape image. I knew one frame would not be enough for the size of the truck, so I shot three images, which I later stitched into one panoramic photograph.

Then I used four cones to mark out an area of 2 x 2 metres roughly in the spot where the truck will go. I took a picture of this set-up – the guys who do the CGI rendering know the size of the cones and they use the image as reference to get the scale correct. Also, if the cones are leaning it tells you that the road is uneven and this also adds realism to the final picture. I use a laser to take measurements of the height of the camera and the distance it is from the cones, etc.

Simon's kit

EOS 1Ds Mark II
EF 28-70mm
f2.8L USM lens
EF 15mm
f2.8 Fisheye lens
Tripod with 360°
swivel head

360° panorama

Next I set up my camera in the middle of the cones with an EF 15mm f2.8 Fisheye lens. I then shot a 360° panorama. This is the techy bit. You can buy specialist cameras that do it all for you, but they cost around £30,000, so I use my EOS 1Ds Mark II, a Fisheye lens and a specialist tripod head which has a precise 360° head. I took six images all the way round and one of sky. Then, to capture the entire dynamic range, I shot 12 frames at different exposures, capturing the very brightest highlights where there is hardly anything recorded to the very darkest where the image is almost black. So for my first set angle, I took 12 pictures at different exposures, then I moved the camera round a notch and shot another 12. I continued all the way round until I ended up with 12 full 360° panoramic pictures, all at different exposures. I ended up with 84 images.

Auto-exposure bracket

I use PT Batch software to apply a pre-made template (made in PT Mac) that stitches the panorama together. I normally leave it to batch process the images overnight, and then I merge them into a single 32-bit HDR (high dynamic range) image in Photoshop.

I'm still pushing things and experimenting; I don't know what I can get away with. You're concentrating so hard but you can still miss frames off. I've made up and printed off a workflow sheet and take measurements at the darkest and lightest point and work out how many frames I need to shoot with the contrast that is present. With the EOS you can auto-exposure bracket three frames either side. If it would auto-bracket six stops either side my life would be so much easier! I wouldn't be surprised if Canon did this in the future because there are a lot of photographers who are shooting HDR. At the moment I auto-bracket three stops underexposure and three stops over, then I have to change the shutter speed to get an extra stop over and under, so I end up with a lot more images that I don't need. Sorting this lot out is a nightmare. It's a lot of post-production work, and it's been a long road trying to sort out what works and what doesn't.

You end up with a picture that looks absolutely awful on-screen because you're viewing a 32-bit image on your 8-bit computer monitor. The mistake I made to begin with was to try and make it look half-decent, but the guys who do the rendering are not interested in a pretty picture – they just want the data that is contained within that file. With all this information they can build a model at the right angle and with the right perspective. They use this 360° panorama – with the street lights, the sky and all the reflection off the



Top You would never normally see any traffic on the Charles Bridge in Prague. The 14th century bridge is open only to pedestrians. This final image incorporates data from 84 high dynamic range (HDR) images.

Centre The initial background shot. This image is made up of three separate images stitched together in Photoshop.

Bottom The 'chalk' stage, where the computer-generated image is dropped in.

Photography & HDR imaging by Simon Plant; CGI and rendering by Andrew Jackson at J3D Imaging; retouching by Simon Plant.



Above An impossible setting for a Nissan Murano in Wookey Hole Caves, Somerset.
Centre The single background image before the computer-generated image of the car is dropped in.
Bottom The intermediate 'chalk' stage.

Photography & HDR imaging by Simon Plant; CGI, rendering and retouching by Taylor James.



statutes – within the rendering software to transmit the lighting and reflections onto the computer-generated model of the truck. This is what makes it look so realistic.

The next stage is what we call the 'chalk' – dropping the computer model into the shot. The truck doesn't exist; it is a computer-generated model that has been built up in stages. Once the model is built on-screen you can rotate it, look underneath it, change the angle and do whatever you want to it.

The next stage is to produce the finished picture. The technology has been around for a while and used in movies like Shrek. A few years ago the resolution wasn't good enough – it was OK for TV and movies, but not for print. Now technology has moved on and computers are more powerful, so the quality is good enough to reproduce in print.

That's basically it!

Team effort

It's very much a team effort; the creative guys at Taylor James built the Nissan model and Andrew Jackson did the CGI rendering of the truck. I supplied all the photography and the panoramic data, and they merged it all. These guys are phenomenal. You're only as good as they are. In the past there was always an issue with the tyres; in CGI they never looked quite right – they always looked pasticky, never rubbery. These guys spend hours just getting the texture right.

When the image comes back to me with the

model added, the problem is that sometimes it is so good, it looks unrealistic. Sometimes, as with the Charles Bridge image, I add noise and distress the final image a little to make it look more realistic.

Even though the whole process is hugely expensive – around £25,000 for one image – the benefits are enormous. Imagine the cost taking a specially-built one-off £1m prototype truck like that on location – the problems with transporting it, the insurance, making sure no one spots it, etc. And now you can produce an image without all that hassle, simply by using the computer engineering data that the manufacturer already has, because the vehicles are designed on computer anyway. Most of Mercedes' advertising that you see today is CGI because the many benefits outweigh the hassle. It's inevitable that soon everybody will be doing it. ●

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