Quite a few years ago, December 2005 in fact, I wrote an article for *Professional Imagemaker* on how one could create a portrait with a pure white background and do so with just one light. The goal of this one light set-up is to create a pure white background, (250 Levels or higher in all three channels) off a neutral coloured wall or backdrop while creating a soft forgiving light quality on the subject and doing so with a nicely exposed flesh-tone. In this current article I would like to revisit this concept and redo it but only this time do it 'blind'. Blind you ask? Well blind in the sense of no modelling light, in fact do it as a strobist using an off-camera flash. In addition to this I'll take it one step further and do it with my old, I mean really old, Vivitar 285 camera flash from the 1970s. Yeah it still works, really well in fact, although the front diffuser has yellowed a little but then who doesn't with age, besides camera flash is not a thing I need so I never updated. Crazy thing was, I popped new batteries in it after letting it sit unused for a good 20 years and away it went! So why the camera flash approach? Well partially to prove that it's not the equipment, it's the knowledge. You can do this set-up with very inexpensive gear if you are prepared to work a lot harder than you would with the right stuff. Also you can pick up oldies like my Vivitar for next to nothing and I've been teaching one-light set-ups as part of my lighting training repertoire for a long time now. A high percentage of the photographers I teach only have camera flash to work with and aren't going to buy into a studio set-up any time soon because they rarely shoot in studios and don't command the budgets to buy, haul, and set up the serious stuff on location.

Camera flash has two really distinct disadvantages to studio strobes. For the sake of portability you have to give up power. Camera flash is pathetic in terms of power compared to the average studio strobe and they often cost more than an entry level studio strobe which is easily three or more times the power. The second disadvantage: complete and utter blindness, that is lack of modelling light – you can't see where the light is falling making my one-light pure-white background portrait set-up seem impossible. But nothing is impossible to the eternal optimist and so with my glass half full let's get it on! (…is that akin to half sober as opposed to half cut?).

The number one trick to this one light set-up involves distance; it works so much easier if you can place the flash further away so that the respective distances of the background and subject somewhat even out by perspective. If you take a look at diagram D in Image 02, you'll notice that the Vivitar flash (in technical speak the 'Origin'), sits about 2 to 2.5 metres (6 to 8ft) away from the subject. I was fortunate that the room I was shooting in was large. You can do it in closer like 1.7 metres (5ft) without too much trouble, but further is easier. Setting up on an angle to the background as seen in the set-up diagram, really helps to even out the background. Obviously the challenge of lighting a background with only one light is that one side of background is always going to be closer to the light than the other side. If things are really bad, you can place a gobo up close to the flash to create a very gradual soft shadow-edge onto the nearest/brightest side of the background to drop its exposure by a bit. Working with a longer lens helps too; the longer the lens the narrower the field of view which means that less background (or wall in our case) will appear in the captured image behind the subject.

The set-up:
Model, Emma Dawn Cartlidge, stood 1.8 metres (6ft) in front of a light grey wall and was on an oblique angle to this wall. A Vivitar 285 flash was clamped to a light stand and was positioned 2.4 metres (8ft) from Emma which made it 3 metres (10ft) from the background wall. This raw light struck both Emma and the wall, see diagram D and image A in Image 2 to view the effects of this direct light on Emma and take note that the wall background is not anywhere near pure white. For this first image, the camera was set to f 11 at 1/200th at 800 ISO for a correct exposure on our subject.

To brighten the background and to soften the light quality on Emma, a Chimera white nylon translucent fabric stretched over a 1.2 x 1.8 metre (4ft x 6ft) Chimera panel frame was placed 0.6 metres (2ft) from the subject, see diagram E in Image 2. The light from the Vivitar flash now has to pass through the fabric to strike Emma, making the fabric the 'Main Source of Illumination' and not the Vivitar flash – the flash is now considered the 'Origin of the Source' (lighting-tech speak).

The white-fabric of the main-light-panel absorbs two stops of light thus dropping Emma's exposure to two stops under, see image B in Image 2. Notice how the background wall is unchanged since the panel blocks none of the light from the Vivitar from its surface.

To restore the exposure on Emma, the camera aperture is opened up from f 11 to f 5.6. This exposes her nicely while it overexposes the background wall into pure white (R: 255 G: 255 B: 255 levels), see image C in Image 2 as well as the hero image in Image 1. Perfect!

The subject shadows were filled in with a second Chimera panel placed on the opposite side. This white reflective fabric panel caught light spilling past Emma from the main-light panel and redirected onto her dark side, see diagram F in Image 2. Done!

To deal with the blind aspect of this exercise – you can't see where the light is going – I positioned my head in various spots over the set to check to see if the light from the Vivitar was striking these areas. For instance, to make sure it hits the background from edge to edge I look through my viewfinder, then by trial and error, or the help of a willing assistant, mark with tape (just slightly out of frame) the four corners of the wall that the camera sees. Once the main panel was brought in, I placed my head against one of the pieces of tape on the background at the end of the wall furthest from the Vivitar. This way I could see if the panel would block any light from the wall which would create an unwanted dark area on the background in the image. Also I stood where the subject would stand and then looked toward the Vivitar to make sure that I could not see it, that is to say, I make sure that the panel totally blocks it to ensure that all light striking my subject comes through the white nylon fabric and not directly from the raw Vivitar light. With that position established I place a piece of tape on the floor and instructed Emma not to stray from that spot.

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Raw Light — A.

Add Panel — B.

Correct Exp — C.

D.

E.

F.
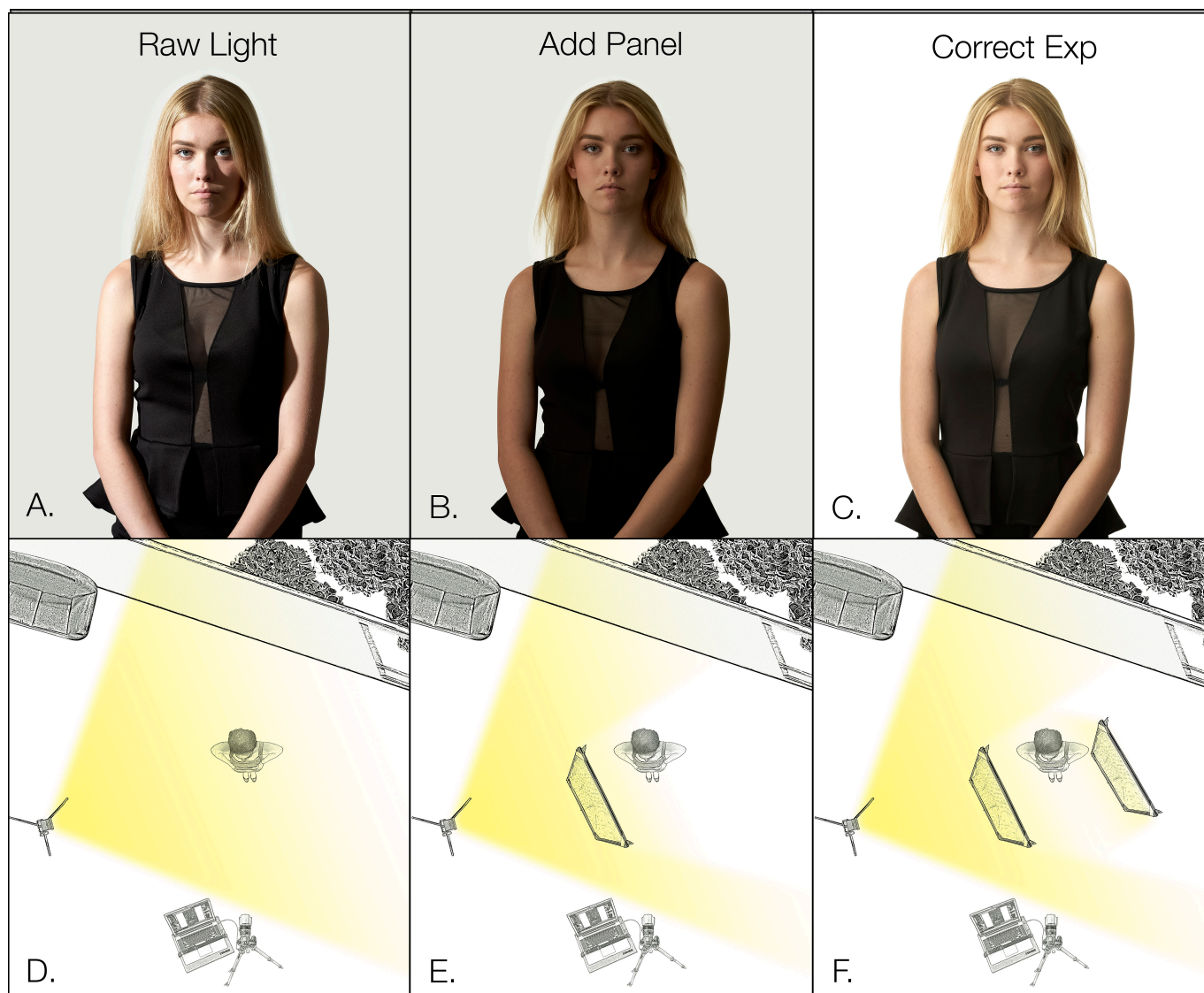
So a rather interesting exercise. Here's a few final thoughts: A single off-camera flash started out lighting both background and subject simultaneously which makes it impossible to over-expose the background to pure white while maintaining a correctly exposed subject. So think differently, invert your point of view, such as, 'If I can't increase light on the background then why not make the subject darker by decreasing the light falling on her then open up for the loss of light on her'. And if that isn't enough to over-expose the background to pure white, then add more diffusion material to the panel, or move the panel away from the subject a little, or feather the Vivitar a little off the panel and more onto the background, or 'soft-edge-gobo' the Vivitar from the panel, in other words find a way to darken just the subject. And on the topic of flash power, the power of a light is relative, the Vivitar is not strong compared to my studio strobes, but at 800 ISO at f 5.6 it is plenty powerful. Also many studio strobes vignette some of the exposure at a flash-sync shutter-speed of 1/200th. One brand of strobes I have shouldn't really go above 1/100th so off-camera flash does have a small advantage here since they all seem to sync nicely up to 1/200th, a good feature when shooting in a location, as I was on this shoot, where lots of windows and sky-lights were allowing light from outdoors onto the set. And finally, the background doesn't have to be white to start with, I have done this one-light set-up on a middle-grey wall, and using the above techniques, over-exposed it to pure white. Theoretically the wall could even be black, but that would be a painful task to set things up to over-expose it to pure white, even my cup is not that half full.

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