P11. Letting the Genie out of the Lamp

Part I

Making Photos circa 1961

WC3526

While the Victorians wide-eyed proclaimed Nature as the drawing mistress and spoke poetically about "painting with sunbeams", photography has always demanded great human skill and an artistic eye. But we in the 20th Century have had no romantic illusions about photography: we came to know it as hard work and a highly competitive industry, one which has saturated our world with images, some exciting, most of them mundane, whether we want them or not. Photography, for us, has been a fact of life and has been with us since we were born.

However, so far in this course I have presumed that you all have perhaps a greater familiarity with the practise and technology of this arcane art than maybe you do. I speak from the point of view of an elderly man who has been involved deeply in photography since the age of 9 so that terms such a "f-stops" and "focal length", "hypo" and "stop bath" are as much part of my vocabulary as steak and kidney pie. So, just in case you don't all have hypo running in your veins, I want now to talk you through how we enthusiastic amateurs made a photograph back in the early 1960s. This seems a convenient era to use, not only because it was then that my wife started complaining about being a "dark room widow" but it was also arguably the time in which technology and public participation in photography as a serious artistic pursuit reached its zenith. Those were the days when an amateur photographer could visit virtually any city or town and find a warm welcome at a local camera club, when — at least in Australia — many cities and rural towns held annual or biennial photographic exhibitions and major cities even staged international ones. For me, although I had greater honours elsewhere, my personal moment of glory was being hung in the Sydney International in 1963.

Another reason for choosing say, 1961 or thereabouts as our point in time is that we can then look back and with the advantage of hindsight, review the technological and other advances which had been made since we left the Victorians with their dry plate cameras and gelatine-based film and papers.

Taking the photo

Cameras

Except for a few quirky people like Man Ray who continued to make photograms, most of us need a camera to take a photograph. Cameras had come a long way by

the 1960s, from the simple box-within-a-box Daguerreotype camera to what was generally regarded as the Rolls-Royce of cameras, the Swedish-made **Hassleblad**[1] 500 series. This was a Single-Lens Reflex camera which consisted basically in three parts: first was the central cube which contained many of the workings; second was a camera back which contained the 120 roll film on which to produce its 6x6cm (2¼" square) negatives. Third, on the front end of the central cube could be added a variety of lenses. This made for a very "customisable" camera, one which the photographer could alter to suit the job in hand: for example, the film back could be exchanged in mid-shoot with another, say one loaded with colour film, or the normal lens exchanged for a telephoto.

Hassleblad 500C

Although the first Hassleblad came out in 1948, the "to die for" model by 1961 was the 500C, first released in1957and made until 1970. The 'C' indicated that the shutter was a Compur in-lens leaf shutter. This camera was expensive and so few amateurs could afford to own one. The camera however, was the popular work-horse of photojournalists and fashion photographers although, it must also be remembered that the ***Speed Graphi****c*, a 4x5 in. larger format camera was also popular, particularly among photojournalists.

The name, *Speed Graphic*, is generally applied to all "Press Cameras" in use from the 1930s to the 1950s, but strictly speaking, the name belongs to Graflex of Rochester, New York, who introduced the style of camera as far back as 1912! Arguably the best camera ever made in America, the *Graflex Speed Graphic*[2] was championed by the photographer known as *Weegee (*his real name was Arthur Fellig). Weegee once said:

> *If you are puzzled about the kind of camera to buy, get a Speed Graphic... for two reasons... it is a good camera, and moreover... with a camera like that the cops will assume that you belong on the scene and will let you get behind police lines*[3].

[1] Image from http://www.patricktaylor.com/hasselblad-500
[2] http://www.graflex.org/speed-graphic/pre-anniversary.html
[3] http://graflex.org/speed-graphic/

The illustration shows the "Pre-Anniversary" Speed Graphic, made between 1928 and 1939, so this was the camera most often seen on police lines during prohibition and depression era photos.

Another camera popular among professionals and amateurs alike was the *Rolleiflex*[4], first released in 1928. This was another "2¼ square" camera as those which took 6x6 cm square negatives were usually called. It differed from the Hassleblad and the 35mm Single Lens Reflex cameras in that it was a *twin-lens reflex camera*…. In other words, one lens was used for focussing and viewing the scene you wished to take, the second (lower) lens actually took the photo when you pressed the trigger. This avoided having to use retractable mirrors and therefore made the camera less complicated and lighter, but had the disadvantage that, close up, because the viewing lens was not seeing the subject from exactly the same position as the taking lens, you got a slightly different picture. This was called a parallax error. Even so, the *Rollei* as it was affectionately called, was the most popular camera among professionals and serious amateurs who valued the larger negative but could not afford the Hassleblad[5].

Rolleiflex 2.8 E2 1959

Rollei produced a host of accessories which greatly extended its range: close-up and telephoto attachments were available as was an attachment which allowed 35 roll film to be used in this otherwise 120 film camera. There was also a cheaper version called the Rolleicord.

[4] http://foto.no/rolleiflex/Rollei-3-9.html

[5] That is, of course, if they wanted one: my own experience was that I did not feel comfortable using a Hasselblad… It was not for me even if it was the most beautiful machine I had ever encountered!

Some of the Rollei models and accessories

As with the 35-mm cameras we are about to look at, there were many cameras made by different manufacturers, some look-alike, others with minor variations. So for example, Mamiya made both twin-lens and single-lens reflex cameras similar to the Rollei and Hassleblad respectively.

35mm Cameras

Various enthusiasts made small cameras from very early in the history of photography, including of course, Fox Talbot's "mouse-traps", although most were little but curiosities. One rather beautifully made wet-plate miniature camera was the Chambre Automatique made in 1861 but whether it had great practical use, history seems not to have recorded.

Miniature Chambre Automatique, 1861

The development of truly practical cameras using standard 35mm movie film began in 1911 when Oskar Barnak went to work at the Leitz Wetztlar Factory with the intention of producing what was called a "portable" camera — this of course, meant more portable than the large wooden cameras then in common use. The following year, Professor Max Berek invented the Leica lens which, coupled with Barnak's camera, produced the Ur-Leica prototype in 1913.

However, it was not until almost a decade later — the Great War intervened — that the first Leica was released onto the commercial market in 1925. In 1954 the Leica M3, perhaps the most famous of all the models, with its interchangeable

bayonet lenses, became available and it was not until 1965 that the first leica SLR, the Leicaflex SL, made its appearance.

Leica, 1925

Like the Hassleblad, the Leica occupied the top-end of the market, used extensively by professionals and amateurs who valued the convenience of the small, extremely "portable" camera but who were prepared to take the extra care in processing their negatives so as to produce acceptable prints. We will come back to this point a little later on…

For others, unable to afford the Leica, there were an increasing array of alternatives available, including perhaps the most affordable quality camera available for a long time, the *Kodak Retina* and its cheaper sister, the *Kodak Retinette*. Released first in 1934, these cameras were the first to introduce the 135 cartridge-type film which has remained with us ever since. Even so, the Kodak range was still relatively expensive — you had to be a keen photographer to buy one — so a niche developed for even less expensive 35mm cameras. First and foremost among these was the range of Argus cameras, the Argus C3 released in 1936 becoming one of the most popular of all. It was discontinued only in 1966.

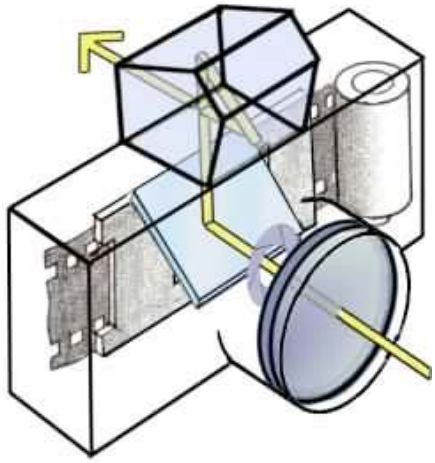
Kodak Retina I, 1946

Kodak cameras from the US and European cameras such as the Contax held the high ground until GIs returning from the Korean War brought home with them the much less expensive Japanese cameras. Canon, for example, had started producing 35mm cameras in 1934, but only for the domestic market[6]. Then in 1935, Hansa Canon started selling their cameras for half the price of a Leica. In 1961 the EE Canonet was introduced and by 1963, a million of them had been sold….

[6] These were named after the Buddhist goddess of Mercy, Kwanon – Kuan Yin in Chinese.

Single Lens Reflex Cameras (SLRs)

Also using 35mm film but a bit bulkier and heavier were the early SLRs which were beginning to find their way into the hands of enthusiasts. In 1952, the Asahi Optical Company[7] introduced its *Asahiflex*, the first Japanese 35mm SLR, which was soon followed by SLRs made by Canon, Yashika and Nikon. Of these, Nikon was the first to introduce what are known as "system" cameras… that is, you can interchange lenses and other components to tailor-make the camera for the photograph you want to make.



How a SLR works[8]

Apart from cost, SLRs were not immediately popular, partly because the earliest had only waist-level view-finders. It was not until 1947 that a Hungarian camera, the *Duflex*, built in an eye-level viewfinder, an innovation which was improved upon by the Contax S in1948 when it introduced the pentaprism now universal in all SLRs[9].

(left) Asahiflex

(right) Contax S - Ver. 2[10]
(Contax cameras were also sold as** Pentacon**).

[7] They later produced the better-known *Pentax* cameras.
[8] http://www.ted.photographer.org.uk/camera_basics.htm
[9] For much of the following, see en.wikipedia.org/wiki/History_of_the_camera
[10] http://captjack.exaktaphile.com/praktina/Contax-Pentacon%20Cameras.htm

Polaroid Model J66, 1961

Polaroid Land Cameras

In 1948, Edwin Land invented what has been named in his honour, the Polaroid Land Camera. The first model was labelled "Model 95". Despite the relatively high cost, many models have succeeded it. As you are probably aware, this camera took "instantaneous" photographs in that it developed the prints while you waited a minute or so, using a package of chemicals built into the photograph itself.

This is beyond the scope of this course so I will say no more about it except to acknowledge that huge Polaroids are now possible and the medium seems to have outgrown the "snapshot" capability of the older models.

Taking the Picture

The first task of course, is to decide what you want to photograph. This might take months — even years — of creative daydreaming and planning or it might be something done on the spur of the moment. Photographers tend to fall into two camps: those who like to plan their photo and those who prefer a more spontaneous approach. To some extent this corresponds to those who prefer studio photography and those whose main interest is in what is called "available light". Someone once said that there are photographers who want to *make* photos and others who want to *take* them…. A relevant example of *making a photo* would be the studio photographer who chooses a model and arranges her dress and jewellery, hair and makeup, adjusts photoflood lights, all set against a special background and only when the image meets his expectation, presses the shutter — or, quite commonly, has an assistant do so for him. *Taking a photo*, on the other hand, is epitomised by the kind of shot a photojournalist gets of a footballer, seemingly suspended in mid-air as he flings himself sideways trying to deflect the ball from the goal.

Exposure: how many "*sunbeams"* to let in?

No matter if you are making or taking your photograph in a studio or a football field, you have to make judgements about how much light to let into the camera. These days of course, we can set the camera to "Auto" and let its little brain to the thinking for us, but that was not so in 1961. Back then you either had to have enough experience to judge the intensity of the light or you used an *"exposure meter"*.

In the early days, when exposures were minutes and even hours long, exposure meters and shutters were not necessary. Photographers successfully controlled the length of the exposure simply by removing and when done, replacing the lens cap. Some even were said to have used their hats for the purpose… And as for determining the amount of light available, it was sufficient to note whether it was a clear and sunny day or overcast…

The first man to make a photography in America, the English dentist DW Saeger, is credited with publishing the first tables of recommended exposure times back in 1839. More recently, the first exposure meters were called *extinction meters*, an example of which was the *Drem Instocope;* how this worked is described by Karen Nakamura[11] at her excellent site, **photoethnography.com**:

The earliest light meters were called extinction meters and didn't require batteries. You looked through their finders at a small strip of letters that were progressively darker. The darkest letter you could just barely read was your light value. You then used the handy barrel to convert the light value to your exposure, taking into account the sensitivity of your film emulsion.

Another extinction meter was the *Zeiss Diaphot Exposure Meter*[12] marketed by Zeiss Ikon from 1926 to 1934. In this, you looked through the little hole at the back and rotated the wheel within so that you viewed the subject through a graded series of filters. The last in which the subject was visible was converted to your exposure on the front of the *Diaphot.*

The main problem with extinction meters was that human eyes are not standardized! Some people have better vision than others and we all take time for our eyes to adjust to a change in light levels. So, for example, people using an

[11] http://www.photoethnography.com/ClassicCameras/index-frameset.html?lightmeters-classic.html~mainFrame

[12] http://www.lungov.com/wagner/c/074c.html

extinction meter usually had to wait a few seconds for their eyes to adjust before they took the reading. Even so, extinction meters were remarkably accurate for their time.

More modern light meters are in fact photovoltaic meters which measure the amount of electrical current generated when light hits a special sensor. Older models used *selenium-based sensors*. These generated enough power to run unaided. Later light meters use a form of *silicon*, but require amplification and therefore batteries to operate. Also requiring batteries, the so-called *CdS Lightmeters* measure, not current, but photo-resistence.

Like most people who have more than one camera, I have several lightmeters, some built into the camera — as, for example, on my Rollei, others which are stand-alone models. These latter are usually older. Two of them worth mentioning here are the Sixtomat[13] and the *Weston Master*[14].

The Sixtomat

This *Sixtomat*[15] was manufacturered by Gossen from 1952 to 1958. The case is of an *ivory-look* plastic and the trim is of brass. A roller-blind doubles as cover and as incident light[16] hood. The *Sixtomat* is calibrated for both the German DIN and the American ASA systems for rating film speed. Although perhaps more attractive than most, this meter was fairly representative of those made in its day.

The Weston Master

[13] http://www.lungov.com/wagner/c/065c.html
[14] Photos and information which follows were taken from http://www.westonmeter.org.uk/
[15] Gossen still manufacture super-thin, state-of-the-art *Sixtomat* meters.
[16] In simple terms, "incident light" is the general light level around you; the other measure is of "reflected light", that is the light reflected off your subject. Pointing a light meter at the subject takes reflected light readings.

The *Weston Master* series of light meters was one of those instruments which not only set the standard for its time but also gave rise to a school among its enthusiastic users. The "school" as I have called it existed among those users who followed the *Zone System*[17] developed by Ansel Adams and modified for roll film use by Minor White. We will look into this later…

Weston Master II Advertisment

Weston Master II

The first *Weston Master* (the *Master I*) was produced in 1939 by Sangamo Weston in Enfield, Middlesex in England and also in Newark NJ, in the USA. What many regard as the most aesthetically pleasing and certainly best-made model was the Master II, released in 1946. This, like the *Master I*, used a white supplementary "Invercone", an attachment which allowed incident light readings to be taken. Both models used the Weston Film speed system instead of the ASA or Din standards later more popular. Model III, the one with which I am most familiar, was released in the mid-50s and like the others, most importantly shows Light Values as well as aperture and shutter speed calibrations.

All models of the Weston Master were sturdily built, easy to use and very reliable. Furthermore, even after the more sensitive CdS light meters were introduced,

[17] http://en.wikipedia.org/wiki/Zone_system

many photographers continued to use the Weston because it did not require batteries. I have two *Weston Masters*, models II and III, which after more or less half a century, are still in good working order. If there was a disadvantage to them, at least in comparison with the CdS meters, is that they, like all selenium cell meters, are not as sensitive at low light levels, but for most of us this was not a frequent drawback.

The Zone System

I mentioned earlier that a "school" — or some might say, a "cult" — has developed around a system of photography called *The Zone System*. I must admit to being a devotee myself, but my intention of introducing it here is to use some of its rudiments as a way of demonstrating what is involved in actually taking or making the photograph. After all, sunbeams don't do *all* the work!

The Zone System was devised by the very famous American photographer, Ansel Adams and a colleague who is usually overlooked, Fred Archer, back in 1941. Although Adams and Archer developed the system for use with monochrome sheet film or plates, it has since been modified for use with roll film by one of Adam's pupils, Minor White while others have even found ways of adapting it to digital photography.

In a sense, Zone System puts the cart before the horse — but with good reason. Zone System starts with the photographer looking at his or her subject matter, the scene or sitter, whatever is to be photographed, and *pre-visualising* what the finished photograph will look like. It then depends on the photographer being able to manipulate all stages of the production of the photograph to achieve this end. This means being able to control the exposure in the camera, development of the film in the darkroom and later, the exposure and development of the print.

All serious photographers know the First Commandment of Photography which states ***expose for the shadows and develop for the highlights***. To help you do this and give you the means to achieve it, Zone System breaks down the gradation of light from black to white into 11 zones (hence the name) numbered 0 to 10.

The continuum of light from black to white

These are as follows:

Zone	Description
0	Pure black
I	Near black, with slight tonality but no texture
II	Textured black; the darkest part of the image in which slight detail is recorded
III	Average dark materials and low values showing adequate texture
IV	Average dark foliage, dark stone, or landscape shadows
V	Middle gray: clear north sky; dark stone, average weathered wood
VI	Average Caucasian skin; light stone; shadows on snow in sunlit landscapes
VII	Very light skin; shadows in snow with acute side lighting
VIII	Lightest tone with texture: textured snow
IX	Slight tone without texture; glaring snow
X	Pure white: light sources and specular reflections

In the final print, Zone 0 is that part which has received so much light that all the silver halide has been exposed and so become totally black. At the other extreme, Zone 10 has received no light at all and so what you see is the pure white of the paper base. As a general rule, all prints should have at least a little bit of each of these extremes — the most common Zone 10 is the glint in a person's eye!

When a light meter looks at a subject and measures the light reflected from it[18], it averages out the various values and gives you a reading which, on its own, would produce a Zone V in the final print. This might mean that, if you exposed with this shutter speed/aperture combination you would end up with a final photograph which was all washed out at the upper, lighter end or with no detail at all in the blacks. Knowing that your meter has given you a Zone V measure, you can then adjust your camera settings up wards or downwards to match what you saw in your pre-visualisation. (In the Zone System, the camera and exposure meter and film, developer etc are all systematically calibrated but we do not need to go into that here).

[18] or of course, measures the incident light…

Finally, just to give you some idea of how the light meter and the photographer might differ in how they see a subject[19], here is a photograph I took in 1961 of seagulls at a rubbish tip at Bermagui… This is, if you like, the way it looked if I exposed for Zone V as the exposure meter told me to do:

With some judicious "cropping" (that is, cutting the image down to show only the picture you want to show) and moving the whole thing down a few Zones, you end up with — not a great photograph but at least something more interesting than the grey clutter of the first impression:

[19] This is a Photoshop simulation, not actual prints.