This PDF lets you into the world of Pinhole photography, tips and a selection of my photographs with details of exposures using two different pinhole cameras, 6x6 and 4x5 sizes
Over the last year or so I have been doing more and more pinhole photography than any other type. I have in my collection of cameras 35mm to 4x5 sheet film, the lens are among some of the best, a Zeiss Planer lens on my Rolleiflex, Heliar lens on my 6x9 Voigtlander Bessa’s, Rodenstock large format lens, so why am I drawn to Pinhole and the somewhat soft negatives they produce.

It has to be said that pinhole camera makers vary in the quality of the pinhole they produce, some are really blurry and others are very good, I have found that the Zero Image company make excellent pinhole cameras and they do produce quality pictures, I have the Zero 2000 6x6 roll film model and the Zero image 45 with 25, 50, 75mm sections for sheet film.

So what why do I find my other collection of film cameras not having much usage over the last year. I think it’s because of the simplicity and sense of anticipation I get from setting up and making all the decisions without any technical aid, all decisions on composure and exposure have to be thought about carefully before taking the shot. I seem to get immersed in this process in a way that only using my 4x5 field camera comes close.

Using the 4x5 field camera is very enjoyable, however harder to use as you have to focus on the ground glass and always be aware that depth of field is limited to the lens you choose, using the 4x5 pinhole eliminates that problem as there is infinite depth from the lens plane to infinity.

The above picture showing the Zero 45 with the 3 sections held together with elastic bands.

I develop all my black and white negatives in my own studio, I have a good understanding of controlling contrast and time in the process, once the negatives are dry they are scanned and all the editing is done on a computer, this is known as a Hybrid workflow.
I would recommend anyone who wants to try black and white film photography to learn how to develop their own negatives at home, that way you have a lot more control over the negative contrast and density and if you adopt the Hybrid workflow you can develop the negatives to suit the scanning workflow.

My set up only requires a small footprint, I have a temperature controlled unit, developing tanks to suit all formats from 35mm to 4x5, timer and chemicals. The whole process can be as short as 6 minutes or as long as 45 mins using semi stand development.
Pinhole Photography

This photograph taken on a trip to Jersey was developed in Kodak Xtol for 6 mins @20c, the film was Fuji Acros.

The picture below was taken in my home town of Otley, the contrast was very high so I developed it in Pyrocat HD which is a staining developer using Steve Sherman’s minimal agitation method.

The film used was Ilford FP4+, the development time was 33.5 minutes @ 21c. Notice in both pictures how well the contrast, shadow and highlight detail has been maintained in both these high contrast scenes, this is why it is always advisable to develop your own negatives.

Pinehole camera tripod mounted and the focal length was 50mm, exposure including reciprocity failure 21sec @ f/176. Ilford FP4+
Pinhole photography is one of the most authentic ways to record images onto photo sensitive medium and the oldest way of capturing images, you cannot replicate its silvery soft tones and unique look in any computerized editing software.

Photography was invented around 1840, the pinhole technique goes back centuries further in fact to around 4th century BC. It was found that if light is passed through a small hole the image would be projected onto a surface upside down and inverted, it became known as the Camera Obscura.

Artist used this method to copy landscapes and portraits by tracing the projected image which was passed through a silk type screen, it was even used to study the Sun without any danger to the eyesight. Many centuries later when the invention of light sensitized materials was discovered, images could now be made from the projection of light through the pinhole.

Using pinhole cameras is the same for all makes, you will need two essential items, the first is a way of taking a light reading, be it a another camera with a built in meter, a hand held light meter or using a iPhone App to take the readings, a tripod is absolutely essential as you will always be using slow to long exposures due to the small aperture. If you have never used a pinhole camera it can seem intimidating, you have no viewfinder to look through, no light meter, and you will nearly always run into what is termed Reciprocity failure caused by exposing film longer than one second.

Using a cut out like this one for the Zero45 and holding it the same distance from your eye as the focal length you’re using will solve the
Pinhole Photography

composition problem.

Any form of reasonably accurate light metering can be used, you can even download phone Apps that use the phones in built light meter, some are free others you pay for although not expensive.

You will find that exposures can be long due to the tiny apertures used in pinhole cameras, using film you will run into what is termed films Reciprocity Failure, exposures over 2 seconds need to be adjusted as film loses its sensitivity. As an example, if I get a light reading of 1 minute using a pinhole that is f/216 using 100iso film, the correct exposure adding Reciprocity failure would extend that time to 6 minutes 49 seconds. This time will vary dependant on film type. Fortunately you don’t need to be a mathematician to work this out as there are charts you can use and again Phone Apps to calculate this for you, the one I use is called “Reciprocity Timer App” and works great.

When you have composed, taken the light reading use a bubble level to make sure the camera is level, open the shutter, start the timer and close it when the times runs out.

If you want to calculate your own exposure and because light meters do not go down to such small apertures as pinhole cameras, you will need to select a working aperture on your light meter, then extrapolate that to the pinhole size for correct exposure, I use f22 for my readings.

To arrive at the correct exposure without taking into account Reciprocity failure this is the calculation.

Example:

Your pinhole size is f216, divide that aperture your using let’s say f22 = 9.81 square root = 96.39 divide by 60 = 2 minutes exposure required. Using this
Pinhole Photography

formula it’s easy to create a chart for quick reference for different focal length pinholes, always add reciprocity failure after the calculation.

On the next few pages are pictures I have taken with my Zero2000 and Zero45 pinhole cameras.

Taken with a Zero 2000 6x6 pinhole camera f/138. Fuji Acros
Pinhole Photography

Subject matter and composition are very important when using pinhole cameras. Because of the soft detail they produce its no use trying to show fine detail, most pinhole cameras have a wide angle of view, some are super wide so you are going to get a lot into the frame, near subjects will be far away as an example the Zero 2000 has a focal length on a full frame camera of 24mm, on the Zero45 you can go as wide as 12mm.

In the above picture the Zero 2000 was 8 inches above the water, the large foreground rock was around 12 inches from the pinhole. The dramatic angle and light gives the image depth and drama the Sun burst gives it luminance and lifts the darker tones. So do get low down. If you shoot into the light its best done when the Sun is low or partially obscured by cloud otherwise you could get a picture that’s ruined by uncontrollable flair.

This picture of the bridge structure I used the infinite depth of field pinhole cameras give, the curve is exaggerated making it almost abstract, the closest rivet was around 3 inches from the pinhole. Being creative with these cameras will produce some really interesting pictures that are different from what we are normally used too, they can create truly unique images that have the pinhole hallmark on them.
You can also produce normal looking wide angle images such as the picture on the left, however I would emphasis again that due to the inherent softness they produce its advisable to get strong lead in lines. I was around 2 feet from the ground to get a strong foreground, this was taken with the Zero45. The focal length was 75mm with a pinhole size of f/216.

Another Zero45 picture, this time with a focal length of 50mm and pinhole size f/176, I got very close to the fence virtually touching it knowing I would get a strong lead in, also as the fence line gets smaller adding the illusion of depth to a two-dimensional image.
Pinhole Photography

This photograph of an old mill on the Leeds and Liverpool Canal was taken with the Zero45 using the 25mm focal length and 138mm pinhole which goes into the super wide category, the camera was placed virtually touching the wall on the lower left and produces a dramatic view with infinite depth of field, at this focal length you will get some vignetting at the corners as the super wide view through the small pinhole falls off at the edges of the film.
PINHOLE PHOTOGRAPHY

Another area of interest and because you do not have to focus the subject or be concerned about lack of depth of field is the ability to place a pinhole camera virtually anywhere, in the image below I wedged the camera into the fork of the tree to give a little seen perspective to the picture, this was taken with the small Zero2000 camera.

Let your artistic side flow, no lens to enhance or degrade, you compose with two eyes, all your own decisions, you are the artist and you decide, take control and enjoy the purest form of photographic capture.

I have no affiliation with Zero image they just make the best pinhole cameras you can buy, look nowhere else and you will not be disappointed.

http://www.zeroimage.com/

Martin Henson Photography