I have always been drawn to alternative photographic processes for many reasons. Among those reasons exists the potential for what I call “happy accidents”: events and outcomes that occur without intention and that ultimately result in a better print.

Typical happy accidents are often related to the print-making process: an unintentional spill of emulsion on paper, a brush-stroke taking on a shape of its own, or a color shining with an unexpected hue. Such accidents, commonplace in the pinhole photography, can lead to a very pleasing print (and, in my case, a very happy photographer).

These “accidents” may also occur in-camera, however: intriguing light leaks, a failure to fully wind between exposures, or an imperfect container all can result in surprisingly beautiful images. When it comes to building a pinhole camera, though, why leave these events to chance? If one can create his or her own luck, shouldn’t it also be possible to lure the happy accidents into form?

Unique Characteristics of Pinhole Photographs

Many special effects can be created by modifying a pinhole camera. As an example, the camera can be designed with a bent film plane, which distorts horizons and subject matter. Additional effects can be obtained by modifying the focal length: a camera with an extremely short focal length creates a wide angle effect, whereas a telephoto effect may be created by building a camera with a long focal length. Another alteration involves zone plates, which are a series of clear and opaque rings that add soft focus and sometimes a halo to the subject. Furthermore, a “cubistic” effect (multiple exposures) can be achieved by building a “chest of drawers” style camera. This effect involves several pinholes exposing light on the paper or film.

When it comes to uniqueness and special effects, my favorite pinhole camera technique involves using multiple pinholes. The first multiple pinhole I ever set eyes on was taken by Jan Kapoor with her 360-degree camera. With such a camera, subjects and landscapes merged in Jan’s images, touching and interacting with each other. Jan’s pinhole camera was created using a hexagonal box. It has six separate pinholes of the same diameter on each side of the box. Inside the camera, the film is wrapped around a cylinder, making it possible for Jan to expose the film from several angles. She is able to use those six pinholes individually, simultaneously, instantly or over a period of time to create her wonderful landscapes.

Constructing Multiple Pinhole Cameras

Now that we’ve covered some basics, let’s delve a bit deeper into my favorite pinhole camera technique. In the experiment I will describe, I had a particular goal in mind: I wanted to see what kind of results I could get by creating and comparing two multiple pinhole cameras of similar size but of different shape: one square, the other round.

The first step? Choosing my containers. I admit that I am one of those computer nerds who buys software and then keeps it on a cardboard box while iPinhole, already black both inside and out, was looking for a container for my most recent camera a big, sturdy, completely black (and therefore already prepped as a light tight container) “Apple” box caught my eye. I was forced to use an old beer can, which was cut, sandpapered smooth, pierced with a needle, scanned in and measured in Photoshop, sandpapered again, scanned and measured again, and again, and again.

One might ask at this point: why drive ourselves crazy trying to make the perfect hole? For this reason: a perfectly calibrated camera has f-stops ranging from f/160 and f/184, and Turizt had an f-stop of f/180.

When the paint had dried and we were finally happy with the pinholes, it was time to test for light leaks. We journeyed into the darkroom and inserted a brand new sheet of unexposed paper into each camera and placed the cameras in the sun for a few minutes, WITHOUT opening the shutters. The paper was then developed and each sheet emerged white as snow – perfect, no light leaks!

We could finally head out to the park to field test our cameras. It was late in the afternoon, but it had been a lovely day and it was still sunny. The September sun was setting behind a wall in From pinhole to print (also shown here) I decided on an exposure of “cloudy at f/180”. This translated to an exposure time of two to four minutes, so I elected to expose the paper for an average of three minutes.

Ginger behaved excellently during the exposure, and the black tape shutters worked fine. Turizt also performed well. iPinhole, however, was a different matter. The use of a black tape shutter on a cardboard box was not optimal, as part of the box’s paper tore loose when I pulled the tape away for exposure. Not only did this affect the quality of the final print, the exposure time increased significantly as I had to cover the holes with my hand on the way back to the darkroom. Not ideal.

It was now late, however, and the sun had set. It was time to call it a day – no more time for test shooting. We returned to...
When light enters a pinhole camera, the image is reversed and upside down. A multi-pinhole camera will not make panoramic images, as perhaps would be expected, since each image is reversed. An object that sits at a dividing line between two pinhole projections will be split into two pieces that are on the far sides of the negative. To achieve panoramic images you would in fact need a very complex design using mirrors. What you achieve instead with a multi-pinhole camera is an interesting blend of the landscape and any unexpected merging of objects. The images reverse into each other, one after another.

Although we have improved our chances of avoiding accidents, we are still treated with unpredictability of pinhole photography: and those aforementioned happy accidents. To the seasoned photographer, pinhole cameras may seem too simple to offer much versatility in the area of photography that includes valuable information for the beginner and advanced pinhole alike. Most of Part II of the book “The Pinhole Camera” is neatly wrapped up with a Beginner Track section, an Advanced Track section and, my favorite, the Creative Opportunities section. Krummel treats the readers with images of prefab pinhole cameras as well as homemade cameras, including everything from tin cans to deer skulls to sourdough rolls, each accompanied by photographs taken with the camera – furthermore complimenting the how-to process. As a photographer, my favorite aspect of workbooks is the photography that accompanies the instruction. These are meant to inspire the student to push the boundaries of the art form and see not only a history of the art but a future. Krummel does do this by delivering a balanced, well illustrated and designed book check-full of information for the beginner and advanced pinhole photographer. Even if you are an advanced pinholer, Chapter 6 - Printing could be new territory that you may want to wander into.

I highly recommend this how-to book to educators looking for innovative pinhole techniques as well as the DIY photographer. The big bonus is that because of the images throughout and the showcase section, “The Pinhole Camera” doubles as a photography coffee table book. Get two, one for the darkroom, and one for the coffee table. More information at pinholecamera.com.