



# The Focal Point



November—December 2007

expose yourself to art™

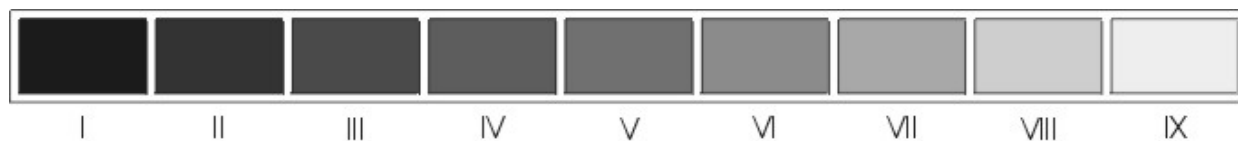
**The EXPOSURE Issue, featuring the inspira-  
tion of Gordon Risk, Gary Faulkner, Ansel  
Adams & Fred Archer**

**The Zone System is a method of understanding and controlling the exposure and development of the negative, and how to vary that exposure to get the results you want.**

Exposure, developing, and printing, are all interrelated. The results of any one can (to an extent) be affected by the others. This provides flexibility. However, the more precise your exposure, the less you will have to compensate during the developing and printing process.

The Zone System was developed by Ansel Adams and Fred Archer as a simple and straightforward method by which they could control exposure. Before Adams and Archer, the photographic industry had already standardized f-stops and shutter speeds as controls of light. But, those standards still left the photographer with the question: "How much light must fall on the negative in order to get the photograph I want?"

Adams and Archer took the spectrum of print values, from black to white, and, using f-stops as the standard of measurement, simply assigned a Zone to each value that each f-stop of exposure produced. This results in a Zone Scale, which is a visual representation of PRINT values from black to white. Zones are always represented in Roman Numerals.



Keep in mind that light meters average the value of all light they see. Based on that average they offer suggested settings (f-stop/shutter speed combinations), all of which result in the same exposure. That exposure is for a mid-gray Zone V.

A one-degree spot meter is advantageous as it allows you to read a single small object from a distance, or, a small portion of your overall scene.

Obviously, print values (from black to white) can be divided into as many, or as few Zones as one wishes. However, eleven is the standard by which most photographers work. This has the advantage of placing the mid-gray Zone V, the meter reading, in the middle of the scale. The Zones are numbered 0 through X. Zone 0 represents the maximum black that the print can produce. Zone X represents pure paper-base white - no image. The nine zones between are each equivalent to one increasing f-stop of exposure. Therefore, Zone III is lighter in value than Zone II, and darker in value than Zone IV, etc.

It is at this point that some students become confused by assuming that a Zone is a specific exposure. Not quite. A Zone is the print value (tone) that will be produced when the film is properly exposed and developed for that Zone. YOU determine the exposure, the exposure determines the Zone you get. Your starting point is the meter's suggested exposure for the

value of Zone V.

Generic Zone scales are reproduced in most major technical books on photography, and found in many magazine articles dealing with the Zone System. However, the only truly accurate scales for you will be the ones you may wish to make yourself, using your personal equipment, films, etc.

The Zone scale is an 11-value gray scale. It can be helpful to picture it in your mind, starting with the black step (Zone 0) and progressing up to the pure paper base white step (Zone X). With the known exposure to render your subject Zone V (the exposure settings your meter will give you) you can adjust your exposure to "place" the subject in any Zone desired, up or down the scale. This helps you to previsualize the value you want, and adjust the exposure to get it.

**Let's review a few points before going further:**

---

1. *The Zone scale is a progressive series of tone values, each value being the equivalent of one full f-stop.*
2. *The light meter provides exposure settings for Zone V, giving you a correct exposure for a known Zone. That's your starting point.*
3. *By adjusting exposure you can place the subject in any Zone, up or down the scale, from your starting point. The subject will assume the tone value of the Zone in which it is placed.*

**Here is a brief description of each of the eleven zones.**

*0 - Black, no texture or detail.*

*I - Near black, no detail. Darkest beginning of gradation.*

*II - Dark gray-black, possibility of slight texture, you think you see it - maybe. Mostly gradation.*

*III - Important Zone, very dark gray, but good texture and detail can be seen. Dark textured bark on shadow side of tree. Where you will probably want to "place" your shadow details. Darkest detail and texture.*

*IV - Medium-dark gray, dark green foliage, shadow side of Caucasian skin. Details plainly visible.*

*V - **Your meter's suggested settings.** Medium gray, Kodak 18% Gray Card, clear dark blue Northern sky, excellent detail visible.*

*VI - Rich mid-tone gray, average Caucasian skin in sunlight, shadowed snow on bright sunny day, sharp fine detail visible.*

*VII - Bright light gray, highest Zone that will still hold good details. Weathered white paint, silver hair. VIII - Light gray-white, shows last texture (minimum) but no detail. Reflected highlights from light colored skin, textured snow in sun. Gradation exist.*

*IX - Almost white, must be compared to white to tell difference, no detail or significant texture visible. Lightest gradation values.*

*X - Reproduces as paper base white, no image recorded. In print, will appear as specular highlights, sun reflection from chrome bumper, sunlit drops of sparkling water, etc.*

**Lets go through the motions of using the Zone System.**

Your camera is loaded, you have your spot meter, light, and an egg. Meter the egg. Set your camera controls according to one of the suggestions offered by the meter. Now, stop! Consider what you are doing! The egg is off-white, it probably should be a Zone VII in the photo, and that's how you want it. But, the meter is giving you settings for a Zone V egg. You will have to give the egg MORE exposure than indicated by the meter (more light on the film, more light in the printed image.) Opening the lens two f-stops from the suggested exposure will "place" the egg in Zone VII.

Now grab that eggplant you just happen to have handy (as long as we're on the subject of eggs). It's not black, but it's dark. Maybe you would like to show it in the print as a Zone III. Again, your meter gives exposure suggestions for a Zone V. By giving two f-stops LESS exposure than indicated, the eggplant will be placed in Zone III.

When changing exposure, you are establishing the tone values in the finished print. In real life, the subject remains the same. It is helpful to mentally visualize the changes in the tone values of the print as you change exposure - moving up and down the Zone scale.

In essence, you have just used the Zone System in its simplest form. However, there are a few more things to cover.

Up to this point, our use of the Zone System has been limited to a single object. In the real world, our scenes often have many values.

Assume you are metering an outdoor scene. You see some good shadow details you want to record, and you place them in Zone III. Now you read your highest scene value and it's only a VII. If you want it to be a VII, then shoot the scene, and that's what you will get. On the other hand, what if you want that Zone VII to be rendered a Zone IX?

That answer is the second part of the Zone System. We can also control Zone placement (to an extent) by controlling development of the negative.

Let's consider for a moment what happens to negative density when we change developing time. As developing time is increased, negative densities increase. But, highlight densities will increase the fastest. Therefore, contrast also increases with increased developing time.

Shadow density is controlled predominately by exposure. Highlight density is controlled predominately by developing time.

Logic dictates that with additional developing time we will "overdevelop" the highlights to push them up a Zone or two. Conversely, "underdevelopment" will lower highlight densities, bringing them down a Zone or two.

Per above, your highest scene value is Zone VII, and you want it to be a IX. You can't stretch it

with exposure, but you can with development. A little additional development will NOT significantly affect shadows, but will push highlights up the scale. Push them up one Zone you have achieved Plus 1 development. This is referred to as N+1, "normal development plus additional development to achieve one additional Zone." N+2 implies two additional Zones.

The reverse is also true. With lesser development, you can halt the process before highlights mature. You can arrest development while a potential Zone VIII has only reached a Zone VI. Again, shadow areas will basically remain unchanged. This is called Minus development, represented as N-2, indicating "normal development time reduced the equivalent of two Zones." Plus and Minus development is also referred to as "Expansion and Contraction" development.

*NOTE: Not all film/developer combinations will give the same Plus/Minus control range.*

With experimentation, you should be able to achieve at least two Zones of highlight density change in each direction from normal. Changes beyond that depend upon the particular combination of materials you are using, and your techniques in handling them.

Keep in mind that with Plus or Minus development, you will also be altering the contrast of your negative. The overall results may prove perfect, or may require compensation during the printing process.

"Fine", you say, "but I shoot rollfilm and cannot develop each negative separately." Very true. The Zone System was created with the use of cut film in mind. Each negative is developed separately. So what of us who use rollfilm? There are several workarounds, any one, or combination thereof, will help get the job done.

Note that those who say the Zone System cannot work with rollfilm are purists. They have not explored the real world. Obviously they have lost sight of the fact that Adams also used a Hasselblad with rollfilm, namely Tri-X Professional. The fact is, with a little adaptation, the Zone System and rollfilm can live quite happily together.

First, assume all negatives on a roll are developed to the same degree. Negative contrast will then vary as original scene contrast varies. In printing, low contrast scenes will be compensated with higher contrast paper, and vice-versa.

Or, one could carry three cameras, each designated for Normal, Plus, and Minus development. **THREE** cameras?

If Your budget allows, you may wish to consider one of the fine cameras with interchangeable backs. One back can be designated for each development.

I have two approaches to the matter. Ultimately, you will find your own best solution. First, I can plan a day wherein my shooting parameters will be very limited. I know where I am going, what I will shoot, and, within reason, know the conditions will not change - including the weather. Under these circumstances (and if I stick to my guns) I should not have to worry about more than one type of development. All negatives will be shot under the same conditions.

When circumstances and conditions may vary, and I do not want to miss any possibility, I take a very different approach. FILM IS CHEAP, DIGITAL IS EVEN CHEAPER! If I'm shooting scenes destined for normal development and all of a sudden I run into a scene requiring Plus or Minus development, I quickly jerk the film in the camera, mark it for appropriate development, and reload. I am not about to miss a great shot just to save a dollar's worth of film. To do so would be penny-wise and pound foolish. If you use 35-mm film and are so disposed, you can



offset this minor cost by loading your own, and always having some short (10 frame or so) rolls in your bag destined for alternate development.

So, that's the Zone System. You now have a good start. From this point you can continue to explore its nuances and technicalities to your heart's content.

