

Time is a factor too, the longer the light is allowed to expose the emulsion, the deeper it penetrates. Darker areas and shadow areas send less light energy to the film emulsion affecting only the emulsion's surface crystals and few or none of the deeper crystals. The lighter tones send more light energy so more light strikes the emulsion penetrating further affecting not only the surface crystals, but also the crystals deeper within. When light sensitive crystals are exposed to light, their molecular structures are altered. It is only the altered crystals that will have a chemical reaction with the developer that results in density on the film. In processing, the shadow finishes developing faster than the highlight. This is due to the rate that the developer penetrates the emulsion. The developer reaches and reacts with the crystals near the surface first, it takes longer for it to penetrate deeper to react with all the highlight crystals. Since the highlight areas of the subject send more light to your film than does the shadow areas, it affects not only the surface crystals but also the crystals deeper within. With normal development times, not all these crystals would be reached by the developer. If you pull the film, taking it out of the developer sooner, less of the crystals will be developed in the highlight area resulting in less density on the film, or in the outdoor scenario we just discussed, the subject's true tonality in the highlight area will no longer appear overexposed.

To summarize, we placed the shadow area at a brightness we wanted it to be (two stops darker than middle-gray) and then brought the overexposed highlight (lit-side) down in brightness from 3 stops brighter than middle grey to 1 stop brighter than middle grey by reducing development time (N-minus-2 pull processing). In essence we actually overexposed and under-processed the film.

Now the part in the last paragraph last sentence where I said "...we overexposed the film..." this may be a little confusing so let me clarify: If I was not using Ansel Adams' zone-shifting, contrast reducing system and had used a reflective reading off a grey-card placed on the lit-side of Julie's face, or an incident meter pointed at the sun, then my exposure would have been f4 at 1/2000 of a second, this would render a correctly exposed grey card and a correctly exposed lit-side face when processed normal. Since f4 at 1/2000 is the correct exposure for middle-grey in this scene, then the f4 at 1/500 exposure (**image 04**) that I took would render this scene (with normal processing), as an over-exposed, high-contrast image.

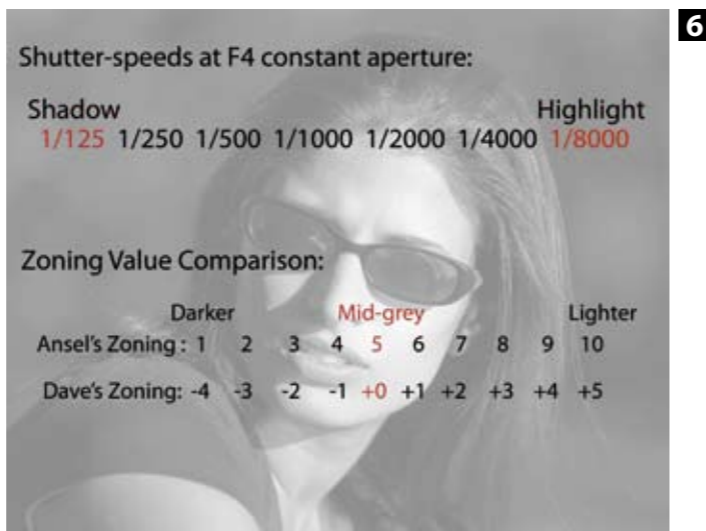
If our outdoor scenario had been different, let's say shot on a flat-lit cloudy day, we could expand the contrast on the film by exposing for the shadow, placing it at a darker value, in other words underexposing the film relative to a grey-card reading, then pushing the underexposed highlight up higher in the scale by over processing (push processing). Push processing is when you leave the film in the developer longer than the recommended normal processing time so that the processing chemicals can penetrate deeper into the emulsion affecting the crystals that normal development would not have time to reach. A longer processing time has little or no effect on the shadow because light from the subject's shadow areas only affects the surface crystals which finish processing in a comparatively short time. Since there are no more light-altered crystals from the shadow area to be developed, further time in the developer has no affect.

So that in a nut-shell is the B&W Zone System, and as you can see from what we just went over, exposing for the shadows is fairly involved, you don't just meter the shadow and set your camera at that setting, it is really about placing the shadow at a tone you want it to be the final image and then placing the highlight or lit-side with processing time.

Looking at **Image 05**, if it were in colour it would be great, but I feel that for B&W it looks a little flat, and so reality is tossed out the door as

I cheat with Photoshop and boosted the contrast a little with **Image 01** which makes the lit flesh tone over exposed but I think better looking. B&W is not reality anyhow.

In the end the question still remains, should I expose for the shadows in digital. The answer is a big fat 'No', digital is much more touchy in the highlight end of the gray scale than is B&W film, so in reality we must do the opposite - we need to create exposures with the highlight in mind and only use incident meter pointed at camera lens in uncontrolled situations where you can only average the available light, more on this in the near future, and I promise if you will read my next article, no more false name-dropping.



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Dave Montizambert lectures internationally on lighting, digital photography, and Adobe Photoshop. He is also a published author having written two books on lighting and digital photography (www.montizambert.com) plus numerous magazine articles on these topics in North America, Europe, Russia and Asia. Dave also creates Photoshop tutorial CDs & DVDs for www.software-cinema.com.

Dave is available for lectures and workshops in your area and can be reached at montizambert@telus.net or www.montizambert.com.

Dave Montizambert owns and operates Montizambert Photography Inc. located in downtown Vancouver. For the past 25 years his company has created photographic images to aid various organisations and companies with their communication needs. He has created images for clients such as: McDonalds Foods, Motorola, Atlanta Scientific/Nexus Engineering, Toyo Tires, Tri-Star Pictures, Warner Brothers, Constantine Films of Germany, Chevron Canada, Cuervo Tequila, the Canadian Broadcasting Corporation, J&B Scotch, Hong Kong Bank, Chimera Softboxes, B.C. Lottery Corp., Blackcomb & Whistler Mountains, Tsing Tao Brewery of China, B.C. Hot House, Kona Bikes, No Fear Sports Gear, Kodak, and Canada Post.

His work has won Georgie, Lotus, Hemlock, *Studio Magazine*, CAPIC, and Graphex awards.

MONTIZAMBERT

LIGHTING FOR DIGITAL 2

