



*Poles and Church, Lamy, New Mexico 2001*

## Getting the Most out of Your Film

A Practical Approach to Film Testing

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Originally, my idea for this article was to put together some thoughts on how to squeeze out the maximum quality from medium format work. A noble concept, but flawed from the standpoint that "quality," like beauty, is very much in the eye of the beholder. In fair pursuit of their personal style, some talented visionaries may strive to see just how gritty they can coax a small negative into being, while others may settle for nothing "less" than a contact print from a very large negative, with subtly gradated tones.

Cameras are only tools, each excelling at doing something and none excelling at doing everything. As much as camera brands

boasting to "take the world's greatest pictures" would like you to think that one size fits all, the physical truth is that in most presentations an 8x10 inch negative produces a VERY different image than does a 35mm. One is by no means "better" than the other, that is always relative to the intent of the photographer.

Because it is not often realistic for most of us to have the ideal selection of equipment for every need that arises, or that one's favorite equipment is simply not practical because of circumstance, it is sometimes desirable to coax some elusive characteristic or nuance out a given format.

In my own case, about six or seven years ago I found it sensible, even necessary, to get back into medium format. Because of the nature of my work (landscape, architectural subjects and still-life) an 8x10 camera had been my impassioned tool of choice for over twenty years. However, I began to run into more and more circumstances where the big camera (or even a 4x5) simply wasn't practical. Wind, weight and speed of use were typical deciding factors. I settled on 6x7 format (a Mamiya RZ) because I am used to working almost exclusively on a tripod and opted for a bigger negative rather than lighter weight or greater mobility. While a 6x7 negative is large compared to 35mm, I knew I would inevitably be comparing the results of that relatively small negative to the 16x20 prints I was used to making from my 8x10 negatives. About the same degree of enlargement as making a 4.5x5.5" print from a 6x7 negative!

My own challenge, then, was to see just how far I could press my new medium format work into looking like the larger format I was used to. Keep in mind that the techniques used here to seek out "finest grain / best sharpness / smoothest tones" apply to all formats and can be applied conversely to find a combination giving you "coarsest grain / fastest speed / greatest contrast," etc. My idea here is to help you find out for yourself what works best, and along the way I'll share my own discoveries.

### **Start with the Basics and Keep it Simple**

It seems every photo magazine runs an article every few years on "getting sharper pictures." So here's me on that soap-box. Use of a solid tripod will make any image sharper than one that is hand-held. If you don't need the mobility and are able to have a tripod with you, use it. If you are using a single-lens reflex camera that has a mirror lock-up, use it, too. A mirror flopping around inside your camera immediately before exposure can't help but result in some

camera wiggle during the exposure, with the result that nothing in the image is as sharp as it could be. What's the point of spending effort and time, using expensive equipment if you wind up with unnecessarily fuzzy images?

Compare one thing at a time. Make the best or most seemingly appropriate choices for comparison testing. There a lot of fine products on the shelves, but you'll make yourself crazy if you even think you can test them all.

In testing for any purpose, keep things as simple as possible. If you want to know what the difference is between two different FILMS, expose samples of the two films on the same scene with the same lens and develop them in the same developer. If a particular film needs a special purpose developer, use it, but consider that combo to be an inseparable unit at first. If you want to compare two different developers, expose a whole roll on the same subject, cut the film in half and develop each half separately. It won't be very meaningful to compare Tri-X photos from your spring break in Ft. Lauderdale with the Delta 100 close-ups of the geraniums in your back yard.

Don't burden yourself with trying to make Art while you are testing. Something as mundane as a light car in sun parked outside an open garage can provide a wealth of information about shadow and highlight rendition, grain and sharpness. Get the tests over with quickly and be ready to really make art later.

Beware of magic potions and exotic elixirs. If it sounds too good to be true it probably is. My own experience with various "fine-grain" developers was usually disappointing. Most formulas seem to cause a loss of film speed or sharpness or both. Some developers with a high or added sodium sulfite content don't actually yield finer grain, but dissolve the edges of the grains making them less gritty or distinct.

Mush. The only "fine grain" developer that I am aware of that actually does seem to live up to its claims is Kodak Xtol. It does seem to give very fine grain, very high sharpness and no loss of film speed. I don't know how it works against hair loss, maybe it does that too. It does seem to have some modest downsides: it's not as economical for high-volume one-shot use as some other developers, developing times are relatively long in the 1:1 dilution, and the very high values (above Zone X) seem to have a bit less tonal separation than I might consider ideal.

It's perfectly OK to mix and match film and developer brands. I like to think of myself as an equal-opportunity photographer: I use Kodak film in Ilford developer and Ilford paper in Kodak developer. As the instruction sheets say, the "times are intended as a starting point only." When setting out to try Film Brand X in Developer Brand Y, see if Brand Y has a film similar to the Brand X film you are testing and start with the time and dilution suggested for the similar Brand Y film. Don't expect perfection right off the bat. Once you've initially settled on a promising film and developer combination you'll likely still have to do some tweaking before you feel as calibrated as you want to be.

Film speeds are not often what they claim to be. The film speeds we see on the box are derived from scientific ISO testing procedures and do not necessarily relate to a film's first tangible response to light (Zone I) as determined by one's own spot meter. Many people find that their own practical film speeds run about 1/3 to 2/3 stops (one or two film-speed increments) slower than the ISO speed. Remember that it is your own light meter that you will be counting on for exposures in the field, so if it is operating properly then consider it to be your standard.

### **Testing One-Two-Three**

For my own purposes I wanted to standardize on a readily available film, one I'd have a chance of finding in a modest small-town camera store if not in a K-Mart. And one that wasn't too slow. That eliminated Agfa 25, which always seemed to test out with a film speed of 12 or 16, and specialty films such as Kodak Tech-Pan. The most likely options were Kodak T-Max 100 (TMX), and Ilford's Delta 100 and FP-4 Plus. I also threw Ilford Pan-F Plus into the fray.

I frequently work in late afternoon slightly backlit scenes and chose the time of day and conditions of the accompanying rural scene as representative of something I might need to do "for real." The power lines and insulators against the sky would offer an excellent opportunity to evaluate sharpness.

I set up the camera and took a spot reading on the dark part of the tree at the right, exposing it at about 2-1/2 stops below middle gray (Zone II-1/2). The brighter parts of the sky fell on about Zone IX. I exposed the TMax 100 and FP4 at a film speed of 80, and the Pan-F at 32. I compared TMX and Delta 100 a few years back and found them virtually identical so skipped the Delta in this test. For the heck of it I also ran a roll of T-Max 400. I ran all four rolls of film through the camera as quickly as possible exposing every other frame at 3 stops overexposed. The overexposure is useful because it helps me evaluate how extreme high values separate, and a bright, but variable sky is a good sample: If I have good extreme high value separation, the overexposed negative should be able to be printed down to be similar to the normal exposure. If the normal exposure yields richly separated tones but the overexposure has a major case of the blahs then I know that the film starts to collapse in that up per range.

For the sake of this test, I decided to revisit a comparison I did a few years ago comparing my usual developer, Ilford Ilfotec HC

(ITHC) with the Kodak Xtol. I stumbled on the ITHC some years



**Figure 1. Normal Exposure**



**Figure 2. Three stops overexposed. Note that the cloud detail is nearly the same as in the normal exposure, indicating that this film and developer combination yields excellent high-value separation as far as Zones XII to XIII.**

ago when John Schaefer sent me some test data from work on Volume 2 of his book "Basic Techniques of Photography." The developer seemed to promise good high value separation as high as Zone XIII and beyond with Kodak TMX, and I have wound up making it my default standard developer. At my standard dilution of 1:49 it is very economical for one-shot use. Ilford's suggested dilution of 1:31 was too contrasty for my taste so rather than shorten the processing times to reduce the contrast, I chose to increase the dilution. I was inspired to try the Xtol after hearing a rave review from a student. Xtol is designed to be used

as a replenished developer, but my own processing sessions are sporadic enough that one-shot work is the only approach I feel I can count on. The developer costs about \$10 for a five-liter packet, and at 1:1 dilution that is enough for twenty rolls of 120. Xtol comes as a powder, but it dissolves at 68° so can be mixed right before use without having to be cooled down.

Since all of each test roll was exposed the same, I simply cut each roll in half and developed one half in ITHC 1:49 and the other half in Xtol 1:1. While the times were "best guesses," and the negative contrasts varied some, the results were sufficient to meet the test criteria of evaluating grain, sharpness, film speed and to some extent general tonality and extreme high value rendition.

### **The Proof is in the Printing.**

As many years as I have been making and looking at negatives I still can't guess how the film will print until I see it on paper. I started by making 6.5x8.5" prints on Ilford Multigrade FB to get a general feel for the image structure. I made rough exposure and contrast adjustments to get a relatively full-scale straight print from each "normal" negative and was immediately satisfied that I could make perfectly satisfactory small-scale prints from any of the test negatives. I'm not looking for art at this point, just facts.

Next, I enlarged the Ilfotech negatives up to 16x20 size and printed 6.5x8.5 samples from the center area in order to see how the grain and sharpness fared at the print size I use the most for my landscape work. The T-Max 400 and FP-4 Plus both exhibited substantial grain at this enlargement and were disqualified for my intended goal of minimal grain. The TMax 100 appeared to be slightly less grainy and slightly sharper than the Pan-F. At half the film speed with more grain, the Pan-F was also disqualified.

To compare the developers, I raised the enlarger to give an overall print size of 24x30" and compared the TMX in the Ilford ITHC with the other half of the roll done in Xtol. At this huge degree of enlargement, the grain in the Xtol negative was still almost non-existent. Tiny specular highlights in the glass insulators above the small house are clear and distinct, and all the type on the small sign to the right of the pole is legible. Pretty impressive.

### **Conclusions**

Even with standard developers, the modern T-Max and Delta films are so good that a 6x7 negative today easily equals what I used to do on 4x5 back in the seventies. I'm not likely to give up the 8x10 because I still find

that big image completely seductive, but I might now be hard pressed to demonstrate much improvement over 4x5. If I were making prints 11x14 or smaller I wouldn't likely see any advantage in using Xtol over the Ilfotech HC, but if I suspected I would want to make 16x20 prints or larger, then Xtol would offer a clear advantage. Since the film speed is the same with either developer, my exposure in the field would not be affected and I could make the final choice immediately before processing.

I'd like to show you the test prints from all of this labor, but I don't think the printed page is up to the subtlety. The necessary half-tone screens of photo-lithography would negate any of the grain and sharpness comparisons I've discussed. Don't just trust me on my findings, though. Trust yourself and your own preferences. The testing is easy and really doesn't take much time. Try it. You'll be thrilled with what you learn.

