



Product shot Photographed by the authors at E.I. 100.



E.I. 200

### Fujichrome MS 100/1000 Professional

Fuji's newest film family all fit inside just one cassette! Fujichrome MS 100/1000 is a transparency film that can be exposed at ISO 100, 200, 400, 800, or 1000. This solution is not unique, as push-processing has been around for years. The difference is that Fuji is working for a more consistent quality match as the film is pushed to higher ISO speeds. This is now possible by incorporating all the latest technologies from other recent Fuji transparency emulsions.

To ensure quality multi-speed consistency, five Fuji technology players help make it one of the best universal emulsions on the market. We realize that some of the technology information can be dry or just plain boring, but we need to establish a base of information to show you just how the film works. So bear with us as we make a quick tour through the microscopic layers that make this film work.

#### DDG, MFIL, AGC, SUFG and of Course, DIR

DDG (Distinctively Developing Grain) technology is an improved version unique to Fuji films. As the film speed is increased, the tonal bal-



E.I. 400

ance, color balance and color accuracy changes are minimized over previous emulsions. When the concept of pushing films first came along, each push in speed raised the tonal curve, increased the contrast, and had a marked effect on the grain size. DDG technology minimizes these effects so that it becomes difficult to discern rolls shot at different speeds.

MFIL (Multi-functional Intermediate Layer) technology is also improved for the new MS 100/1000 emulsion. Each layer is treated separately with this technology and has the responsibility of maintaining a true color balance as the film is pushed to the maximum range.

AGC (Accurate Gradation Control) is a technology brought over from other emulsions and is used to maintain a super-fine grain structure throughout the pushing process. The result of the grain control is cleaner, smoother tonal gradations from highlight to shadow.

SUFG (Super Uniform Fine Grain) technology has been used in many of Fuji's previous emulsions and is the main technology that keeps grain pattern even and very fine. This, in



E.I. 800



E.I. 400



E.I. 1000

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turn, gives a sharper image with nice tonal gradation.

DIR (Development Inhibitor Releasing Compound) technology has been around for some time and works on the individual layers to keep colors from crossing over into each other. For example, the reds of a very saturated flower will not bleed its colors into the adjacent green leaves, or into subtle tones in the red itself. This trait keeps color reproduction realistic from E.I. 100 to 1000.

Keeping track of the E.I. you use only requires that you mark or scratch the square on the film canister that represents your E.I. push speed. If you shoot at the normal rating of ISO 100, you can mark the "N" or just not mark the film at all. A "P1" push requires an increase in processing time from 6 to 8 minutes. "P2" should be at 11 minutes, "P3" at 14 minutes, and "P4" will vary from 14-15 minutes. It is critical that you run tests ahead of time to verify that your rated E.I. speed matches the processing time setup for that speed. Most film processors match pretty closely at normal process-

<b>DIFFUSE RMS GRANULARITY VALUE</b>	
<b>Film Speed</b>	<b>RMS Granularity</b>
ISO 100	10
E.I. 200	11
E.I. 400	13
E.I. 800	15
E.I. 1000	16

ing, but start to vary as the processing time is increased.

The tech sheet for MS 100/1000 is quite extensive and has a lot of information about using the film under tungsten light, fluorescent lights and flash, and also includes reciprocity failure data. Most of the filters and times are similar to past films, but you should check the data sheet for each recommendation. You can download the tech sheet from the Fuji's web site: [www.fuji.com].

One interesting item on the tech sheet we have not seen before is an RMS Granularity rating for the film at different

film speeds. These values are a good yardstick to see what happens to the sharpness of the film as you push it.

### Testing and Results

Fortunately, this film test hit at a good time of the year. A hot-air balloon race was on our shooting schedule, and we also needed an excuse to make a couple of trips across the Oregon countryside. The balloon race was a challenge because the extreme lighting ratio was more than most films could handle. We loaded one roll after another, increasing the ISO setting 1 stop each time. Using a special computer program built right into our Model 5 Wing-Lynch film processor, we were able to set each "P" time. If there was any change in temperature, the on-board computer recalculated a new time on-the-fly and adjusted the time as it processed the film. Thus the accuracy of these tests were to one second, and 1/10 of a degree in temperature.

The results of the 100, 200, and 400 speeds were almost identical, and we

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would be hard pressed to tell the difference without a high-power loupe. We did notice that when we moved to E.I. 800 and 1000 there was some increase in the base density. This was only noticeable when we shot images with scene ranges greater than most transparency films can handle. The film does work very well at these high settings when the lighting is flat and the scene range goes from off-black to white.

After we processed the next batch of film from our countryside trip, we were able to conclude additional results. We noted that the grain remained very fine throughout the process, and did not get out of hand when it reached the upper limit of E.I. 1000. We also noticed that the color saturation, and tonal values remained the same from ISO 100 to E.I. 1000. This means that a photographer could shoot at any speed, mix them in a slide show, and they would all match closely in quality and color fidelity. Exposure latitude from ISO 100 to E.I. 400 remained pretty much at +/- 1/2 stop for usable images. The exposure latitude from E.I. 800 to 1000 was a little bit less. We also noted that the film performed very well in shady areas that would normally produce a blue shift.

The best part of this film is that if you just want a very fine grain ISO 100 film, it will do a great job. The extra potential for pushing is like have additional film family members in your camera bag. You don't have to decide on the ISO until just before you load the film into your camera.

At present, Fujichrome MS 100/1000 Professional will be available in 35mm cassettes, bulk 35mm, 120 and 220 film sizes. The film can be processed in either E-6 or CR-56 film chemistry. Selecting a good film in today's marketplace is a no-brainer. They are all pretty good. It's just a matter of preference and unique specifications for each film. If you like the convenience of having a high quality transparency film, yet still want the choice of several film speeds, we think you need to give Fuji's MS100/1000 a try.

Jack and Sue Drafaht are freelance journalists/photographers living in the Pacific Northwest. They have owned and operated a custom lab and service bureau, Image Concepts, for many years. They can be reached at: [concepts@pacifier.com](mailto:concepts@pacifier.com).

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