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CAMERA; NEW COLOR FILMS: FASTER, SHARPER AND BRIGHTER

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A new generation of 35mm color films recently introduced by Kodak, Fuji, and the 3M Company will deliver better and brighter color, extraordinary skin tones, very fine grain, and in some instances, emulsion speeds that are as much as 2 1/2 times faster than the fastest ISO emulsion now available. What all this means to the photographer is that quality heretofore obtainable only with larger format cameras is now possible with 35mm equipment.

The new films do vary from one another in individual characteristics -some are warmer in tone, some are cooler. These variations give the photographer the ability to use these films as though he or she were seated at the controls of a complex color console - carrying a variety of different types of film enables the user to master even the most difficult situations by choosing the kind of film that will best suit the subject at hand.

The sports and action photographer, for example, will be able to select an ISO 1000 color film that will "stop" the fastest action, and at the same time he will be able to use a smaller lens opening for increased depth of field. The nature photographer can use a slower color film that will produce wall-size enlarged color prints without grain and with great fidelity to the original subject.

The first company to announce the results of this new film technology was Eastman Kodak. Using a new kind of chemical ledgerdemain called DIR (development-inhibitor-releaser) technology) that chemically enhances edge effects such as eyebrows and blades of grass, it greatly improves the overall sharpness of the image. This is accomplished during development by inhibiting molecules which have been designed to compensate for light-scattering and internal diffusion effects which otherwise make edges look fuzzy.

Taking the process a step further, Kodak engineers also incorporated DIR's into the fast magenta and cyan layers of the film to improve speed and color reproduction, insure finer grain, and provide extra latitude, particularly in underexposure.

Some of this know-how was an offshoot of the remarkable development of that company's DISC film, which already has demonstrated its ability to produce excellent quality color enlargements from color negatives smaller than your finger nail. All these advances have been embodied in four new films from Kodak: Kodacolor VR100, 200, 400 and 1000 (in each case the number indicates the ISO speed).

The 100 and 200 films are the sharpest Kodacolor films ever to be put on the market. They have the ability to render exquisite detail and complex textures with ease. The grain size in both is comparable, but the slower film is a little better in image sharpness. The VR 400 film is an improvement over the 400 now on the market in that is has much finer grain and sharpness, and flesh tones also have been improved.

Kodacolor VR1000 is a blockbuster. It will open areas of phorography never before possible. This film may be used in very low illumination areas - for example, pictures can be taken by the light of a single candle or in dimly-lit sports arenas.

One additional advantage common to the entire group is wide exposure latitude; these films will successfully cope with under-and over-exposures of as much as two stops. This, coupled with the fastestfilm speed makes it

possible to expose at incredible ISO ratings of 4000. This will result in additional graininess, added contrast and decreased sharpness, but the speed is there for emergency when needed.

Fuji has also been improving the quality of their films. The company has developed something called DSG (Double Structure Grain), a new concept in crystal growth of the grains in the film. These grains have a double structure. The outer shell of the DSG traps photo-electrons during exposure, while the inner core controls graininess during the developing process. By dividing these two functions, Fuji engineers have increased the efficiency of light utilization, while at the same time producing remarkably fine grain.

Finally, a DIR (Developer-Inhibitor-Releaser-Coupler) releases an inhibitor during development that enhances color brilliance and picture sharpness. This new technology has been incorporated into Fujicolor HR100 and 400 (the HR stands for High Resolution). Both films have a broad-based spectral sensibility - the ability to deal with indoor and outdoor lighting situations, even without the use of special color correction filters). For optimum results, however, the films perform best in daylight or with electronic flash.

The 3M company has opted for high speed. Their newest film, at ISO 1000, is the world's fastest color slide film with a speed 2 1/2 times faster than any other slide film. It is ideal for the photographer interested in action, theatrical, and underwater photography, and is also excellent with long telephoto lenses where camera or subject movement can be controlled by using high shutter speeds. It is a daylight balanced color slide film that also will perform well with electronic flash.

For the photographer who must take pictures indoors at night in tungsten light, 3M also makes the fastest indoor color slide film, ISO 640T (the T stands for tungsten) that works well with stage spots, sports arena illumination and theatrical scenes. Both these films may be processed in conventional E6 chemistry. Both may be "pushed" with credible results.

Here are some of the results I have had in comparing different brands of these films : Comparing Kodak's 100 with Fuji's 100 I find Kodak's film a bit "warmer," making it a good choice for overcast or rainy weather where it will deliver excellent color rendition without filtration. Fuji's "cooler" rendition produced good color early in the morning or late in the afternoon when the sunlight is usually very reddish.

In comparing Kodacolor VR 1000 with 3M 1000 it must be remembered that this is really an apples-verses-oranges situation since Kodak's film is color negative and 3M's is a color slide film. Perhaps because of that difference the Kodak film is less grainy than 3M, with a little more latitude.

Another new entry in the field is Polaroid's new 35mm Autoprocess system. Built around a new series of color films and black-and-white films that may be used in any 35mm camera and a special Autoprocessor (which sells for under $100), the system provides immediate developing and viewing in broad daylight - without need for a darkroom and without need for washing, drying, or precise temperature control. Here's how it works.

After exposing the film in the camera in the usual way, the special Polaroid film is rewound into its cartridge and placed into the Autoprocessor along with its matching processing pack (the pack contains exactly the right amount of chemicals for one roll of film). The lid of the Autoprocessor is closed, a lever pressed and a processing crank is turned. A strip sheet emerges from the processing pack and is evenly coated with processing fluid, then it is laminated to the exposed film.

Both strip sheet and exposed film are then wound together onto the take-up spool where they remain in contact for the 60 seconds necessary for development of the film. At the end of the 60 seconds the control lever is moved back up to its original starting position and the processing crank is once again turned to rewind the processed film back into its original cartridge. Simultaneously the strip sheet, along with discarded layers of the processed film and any unconsumed processing chemicals, goes back into the disposable processing cartridge.

Next, the Autoprocessor is opened, the processing cartridge discarded and the film cassette with its developed film transferred to the 35mm Polaroid 35mm slide mounter. Specially designed plastic slide mounts go into the other end of the mounter and the dry, developed frames cut apart and quickly mounted with a minimum of film handling. The finished color or black-and-white transparencies may then be viewed or projected.

In the beginning there will be three autoprocess films available; (1) Polachrome CS 35mm color transparency film, balanced for daylight, and with an ISO of 40. (2) Polagraph HC (High Contrast) black-and-white transparency (slide) film, with an ISO of 400. (3) Polapan CT 35mm continuous tone black-and-white transparency (slide) film, with an ISO of 125. Prices have not yet been released as of this writing, but they are said to be competitive with existing film and developing charges.

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