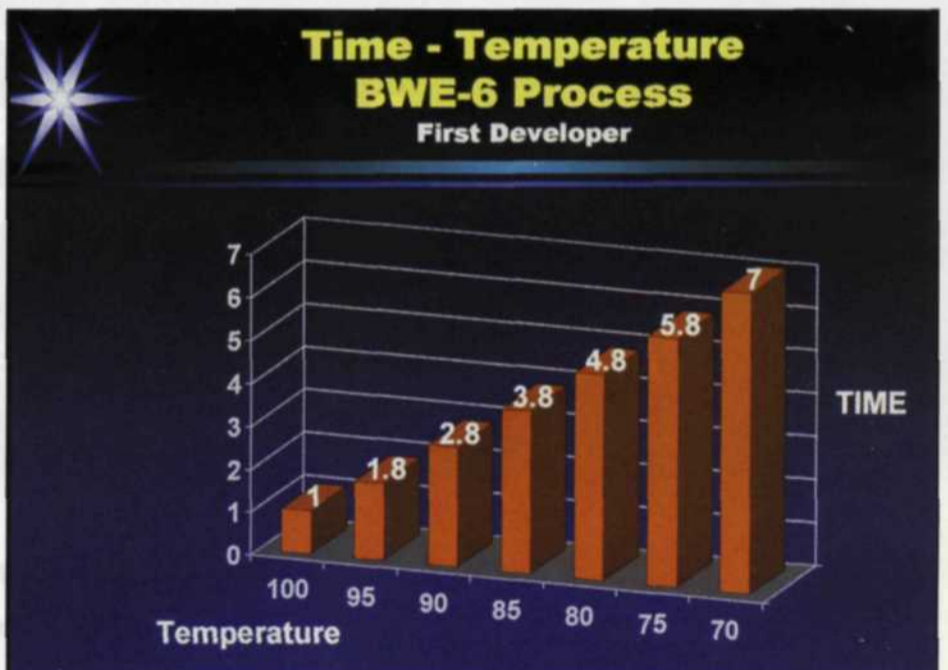




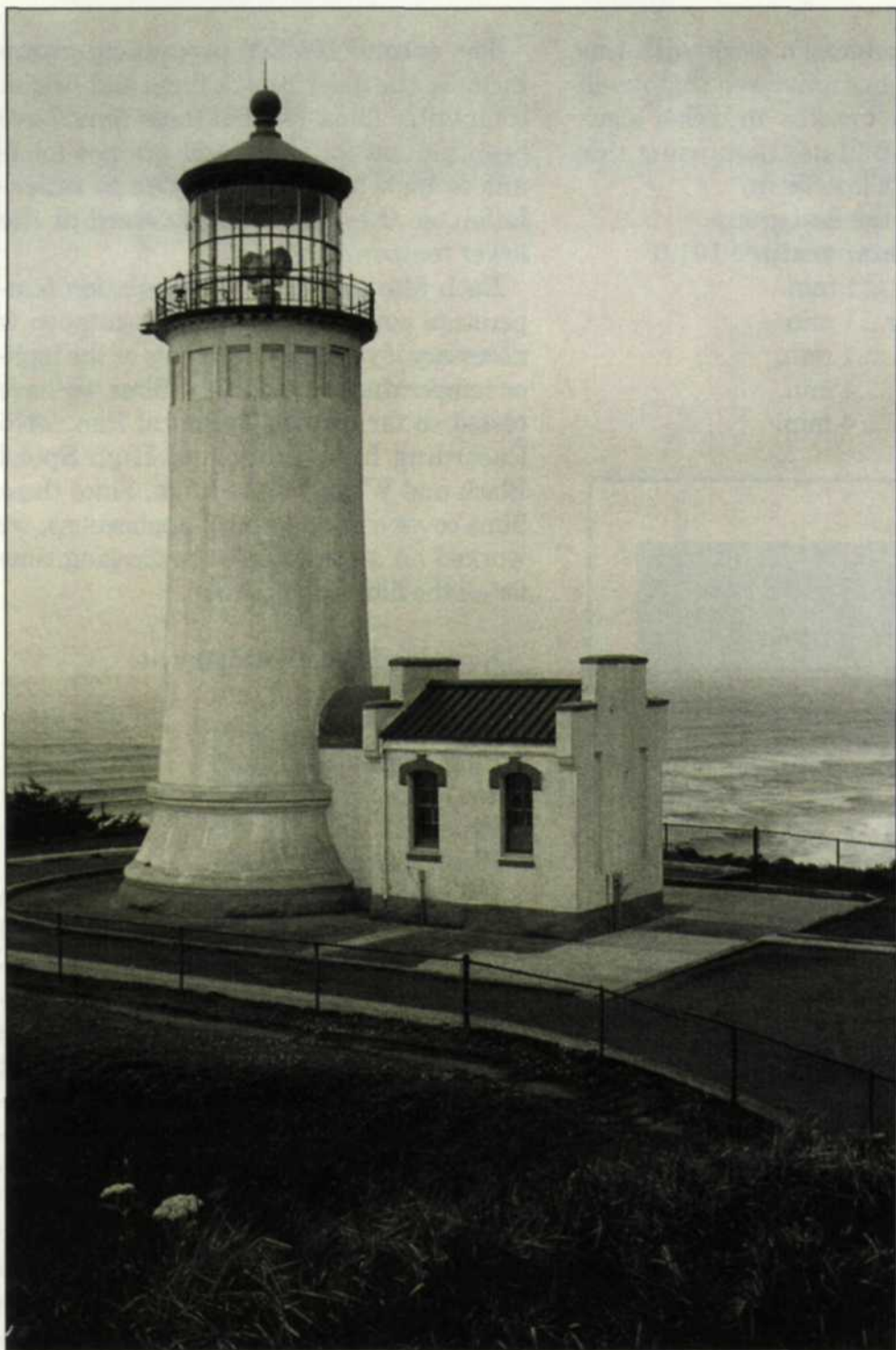
# B&W Films in E-6 Chemistry

In a recent PLM article titled "B&W in Color," Jack and Sue Drafahl discussed alternatives for creating black-and-white images using C-41 black-and-white films and RA-4 black-and-white papers. These products were specially designed for creating black-and-white images using color chemistry, and provide a high level of black and white quality.

Now the Drafahls, themselves lab owners, are going to add a twist to this concept and show you how to process almost any black-and-white film in E-6 chemistry!







**YOU ARE PROBABLY** wondering just where we come up with these crazy ideas. Well, you won't find this black-and-white process in your standard Fuji/Agfa/Kodak processing guide.

The truth is, we worked it out in our lab, plain and simple. If you have a big photo lab with lots of black-and-white jobs, this process will probably have little value for you. Those of you with smaller labs, with only an occasional black-and-white film processing job, might consider this process as an alternative.

We devised the BWE-6 process out of necessity. In the process of moving our lab and reducing equipment, we gave up black-and-white film processing services. We converted to the "Black and White in Color" process, but wouldn't you know it, a processing job came along that required us to process standard black-and-white films. We

had the choice of outlabbing the films, or finding a brand new solution. Fortunately, we like challenges!

When Wing-Lynch first started testing its Model 5 processor years ago, beta #3 was installed in our lab. Since then we have tweaked, modified, and created a wide gambit of processing techniques to enhance this computer controlled processor. With the Model 5, it only takes seconds to modify an entire film process, so we went to work with our chemistry research.

We knew that the 1st developer in the E-6 process was essentially a black-and-white film developer, and that the fixer was a toned-down version of a black-and-white fixer. What we didn't know was just how close these chemistries are to their black and white counterparts. We researched to see if someone else had tried this crazy idea, but if they did, they kept the results to themselves.

## Jack & Sue Drafahl

The only way to see if our idea would work was to reserve a day or two and run every possible variation with the processor. In only one day of testing, we found that most all black-and-white films can be categorized into one of two BWE-6 processing groups. The E-6 chemistry used for the tests were from Kodak 5 gallon EAR-6 chemical containers and mixed per Kodak's mixing instructions. It's the processing instructions that we ignored.

The first group includes all the black-and-white T-MAX films, which can be processed at the same temperature as standard E-6 film. The one minute processing time in the first developer was a big surprise.

At first we were not sure that the short time could be reliable, but considering that the temperature is controlled to .1 degree and the timing is controlled to the



split second, it worked fine. We found very consistent results after running several tests at this temperature. A side benefit was that the grain was very small due to the very short wet time.

Keep in mind that every processing lab has different film processing requirements, so only use these numbers as a starting point. This process works best with single shot processors, or processors where you can easily change the processing instructions. Most important,

don't run any customer's work with this process until you are convinced that it will work for you. Don't mix in any other black-and-white or E-6 films when using this process or you will lose them.

The results for the first group:  
**Processing Temperature 101.6**

Presoak.....1 min.  
First Developer....1 min.  
1st wash.....1 min.  
Fixer.....4 min.  
Second wash..... 4 min.

The second BWE-6 processing group includes the older Kodak films and Kodak compatible films. Most of these films have been around for years and are not tolerant to high temperatures due to reticulation, so they must be processed at the lower temperature.

Each film has its own reticulation temperature point, so some experimentation is necessary if you want to process at the higher temperature. Some of the films we have tested so far include Technical Pan, 2475 Recording film, Tri-X, and High Speed Black and White Infrared film. Since these films cover a wide scope of applications, we worked on a compromise processing time for all the films in this group.

**Standard E-6 chemistry at 70 degrees**

Presoak.....1 min.  
First Developer..7 min.  
1st Wash.....1 min.  
Fixer.....8 min.  
Wash.....8 min.

If you desire an increase or decrease in contrast, film speed or gamma, you will need additional testing with these processing numbers. We experimented with slightly higher temperatures in hopes that the cold processing times could be reduced, but without consistent results. If you are an impatient lab tech who thrives on experimentation, go for it and just use this time temperature chart as a starting point.

After using the BWE-6 process for a few weeks, we did find some differences between it and standard black-and-white film processing. Small changes to processing times in the BWE-6 have a more dramatic effect than with standard black-and-white chemistry, so make tiny adjustments during your testing.

We also noticed that if you overprocess in the BWE-6, you will get some slight rebate fogging in the base density. During our initial tests, some fixer stains prompted us to increase the fixer times. If you see these stains, increase both the 1st wash and the fixer time.

Remember that every lab has different black-and-white processing techniques, so use these values as a guideline. This is not a process we are recommending to everyone—only those willing to accept a challenge. If you're willing to experiment and keep an open mind, maybe the Drafaahl's BWE-6 process will work for your lab.

*Jack and Sue Drafaahl own and operate a custom lab in Portland, OR. They are also professional photographers, specializing in underwater photography.*

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