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A hobby becomes a passion



The place, a Hollywood studio, and there is a coffee break in the production. A well-known cinematographer is asking me, "what are you going to do, now that you've decided to retire?" "Sharpen my golf game." This professional, whom I respected, retorted "why don't you take up still photography? You're creative, and your visual instincts are good, get yourself a still camera and shoot, shoot, shoot!" Little did I know then, where his advice was going to take me. Within a month after retiring, I had purchased a medium format camera and was photographing people, a subject not unfamiliar to me.

A few months later, after challenging myself by doing self-portraits (rigged up a self-remote tripped by my foot, since my hands were always busy) by chance I happened to see a notice in the local newspaper "Interested in photography?" "Join a camera club".

"What's a camera club?" I responded to the notice by going to a meeting, and was pleasantly surprised at the professional quality and diversification of subject matter in both color and black & white photos presented. This club is one of over 25 clubs on Long Island, New York, and is a member of the Photographic Society of America. After further visits to different clubs, I joined the club I believe to have the most talented male and female photographers, and thereby created a new challenge for myself.

The club has three levels of photographers: Beginners (class B), Advance (class A), and the Salon group. I showed the club members some examples of my work and they felt I should be in the Advance group I, color and black & white prints and slides. I was also informed that in order to be in the Salon group, I had to print my own work. This required a darkroom, which I did not have. With the help of a few fellow club members, I set up a modest darkroom. To this day my darkroom skills are self-taught, except for one half-day seminar on color printing.

My professional background was in TV broadcasting, a demanding profession where one must be in total control of the subject at hand. You can be in control when you are in a studio. You control the subject, lighting, exposure... no problem. No need for second-guessing. In a studio, the subjects don't run away; there is no wind to disturb a macro shot of a dahlia either. The name of the game is preparation. Know your subject. The more I prep for a photo shoot and pre-visualize the subject I intend to photograph, the less I find I have to burn and/or dodge. When I can, I fill the frame for those 16x20" prints.

My modest darkroom has grown from a B8 Omega enlarger to a D5XL. My new best friend in the darkroom, a JOBO CPP-2 with Lift accessory, has replaced the small tube processor. Since purchasing the CPP-2, I now have less waste of paper and chemicals, which in turn leads to less time in the darkroom and more time to photograph elusive wildlife. Birds and animals are challenging subjects; first because of their unpredictable behavior, second because uncertain lighting conditions can be brought on by changing weather. ***This, is *not*being in total control!***

Tom Murphy, a professional photographer, runs photo workshops, and one in particular that excites me. A good friend and fellow photo club member and I joined Tom and five others photographers (two working professionals) in Yellowstone National Park. Nobody knows Yellowstone like Tom. He has spent 25 years photographing and studying its environment. After the workshop, on the plane back to New York, I kept visualizing the results of eight cold wintery days photographing the elusive wildlife and the magnificent landscape I had experienced. Yellowstone, the crown jewel of our National Park system was everything I had imagined it to be in the dead of winter (I'd been there before in the Fall). My best friend in the darkroom, the CPP-2, turned out 16x20" prints that I intend to submit in the Salon Group for critique/competition this coming year. Whatever I'm photographing now, I know that when I see in the viewfinder a 'gotcha', my darkroom friend will reproduce that exciting moment on paper.

Thanks to a friend suggesting I take up this hobby, and to my friend, the CPP-2 processor, photography has changed how I look at life.

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What Speed is it Really?

by Ken Owen

Recently a JQ subscriber wrote and asked us to be more specific about processor settings when we write about film and paper processing tests. This is an excellent suggestion we will try to implement in the future. However, it caused me to think that perhaps it might be useful for you, the reader, if I described the various processors and how to "translate" rotation speeds for your machine.

First of all, let me make you aware that you do not need to get too fussy about the precise speeds in use. As a percentage of speed, it appears that an approximately 30% speed shift is required to show a significant difference in the densitometric tests of the resulting images. Years ago, we tested this very concept and found that the 75 rpm speed had to be slowed to about 50 rpm before we showed a 0.03 logD difference in the results. (0.03 logD is roughly equivalent to 1/10th of one *f* stop.)

Another factor that will affect the speed of the rotation motor is the weight of the load on the motor. A 1526 Combo tank used to process one 8x10 print only needs 50 ml of solution, so there is not much drag on the motor. On the other hand, a 3005 Expert Drum for 8x10" sheet film may contain up to 1500 ml of solution. Plus, the vents on the bottom of the Expert drum draw in water from the processor's water bath, so there can be a very large drag on the motor when using this drum. For best results, you will need to test your processor speed with the tank or drum loaded with the amount of solution you plan to use in the actual process. On the CPA-2 and CPP-2 manual processors and the ATL-1 AutoLab, this will make a difference in your speed setting. On AutoLab processors from the ATL-2 on up, the speed is microprocessor-controlled regardless of the weight of the drum load, so you don't have to worry about it.

To test the rotation speed on the CPE-2 (not Plus) CPA-2 or CPP-2, begin by loading the tank/drum with the amount of solution you anticipate using. Then set the speed to the anticipated setting on the dial. Now swing the three-fingered switch out from behind the rotation motor's magnet or gear. This will allow the motor to rotate in one direction only. (Note: Testing such as this is the only time we currently recommend single direction agitation. For all normal film processing we recommend bi-directional agitation.) Now with the tank/drum rotating, start a stop watch, and begin counting the revolutions by noting the passing of the label with each revolution. After one minute, you'll know the rotation speed. Obviously you can also count the revolutions for

15 seconds and multiply by 4. But the point is this: it's easier to determine the rotation speed than it is to take your pulse.

Now let's get down to the particulars for each processor.

The DuoLab, CPE-2 Plus, ATL-1000 and ATL-1500, as well as the new ATL-500 and ATL-800, all run at a fixed speed of approximately 75 rpm. So there's no rotation speed adjustments or testing needed here. (DuoLab owners will note that their agitation motor does not reverse direction. When we first saw this we were concerned about the possibility of streaks. However, after testing with BW, C-41 and E-6 films, we found no sign of streaking or bromide drag. We believe this is due to the limitation of small size tanks it is capable of handling. It works perfectly!)

The older CPE-2 processors had two rotation speeds, marked 1 and 2. They were approximately 25 and 65 rpm. There was some variation with individual units, but probably not enough to make any difference in your results. With magnet drive you can use either speed setting, but with the JOBO Lift you must use the #2 setting. The #1 setting doesn't have enough power to keep on doing the rotation with the additional drag of the Lift arm. At least not for long.

The CPA-2 and CPP-2 have continuously variable speed controls. The dials are marked 0, F, 3, 4, P, 6, 7. Originally the F and P stood for film and paper. But with more research, Jobo learned that almost every process ran better at higher speeds. Today, we recommend as a basic guideline that all tanks or drums that couple to the lower spigot on the Lift arm be rotated at speed P, and that all drums that couple on the upper spigot, be rotated at speed 4. (Those of you running with the magnet coupling will use speed P for all tanks/drums.) These two speeds will be close to 75 and 50 rpm respectively. The single exception to this rule is that Ilfochrome prints should be rotated at speed F (approximately 25 rpm), to help hold down the contrast.

Those of you with AutoLab processors ATL-2 and higher know that you simply select the specific rpm setting you need, without any translation required. On earlier models you could select Quick Start, 25, 50, 75 or 100 rpm, or Disc. The Quick Start was an automatic speed variation program for Ilfochrome. It started out at 100 rpm for the first 25 seconds, and then slowed down to 25 rpm for the rest of the chemical time. For water rinses, it runs at 25 rpm the whole time. The Disc setting was 100 rpm in a single direction. Disc film needed a very high agitation, and reversing directions reduced the agitation somewhat.

Now you are fully armed with virtually all the rotation speed information. If you see any articles written about any JOBO processors that indicate some sort of speed setting, you should be able to convert that to useable information for your machine.

You Can Enjoy Making Prints From Slides, Really... You Can!

By Sam Proud

There is just no way around it, darkroom enthusiasts either love or hate making prints from slides. I have to admit I was one of those who did not relish the job. It was messy; the process took too long for each print and it was too expensive. I could think of a hundred excuses not to do reversal printing. Then I found out that I was, in fact, only fooling myself: the real reason was I never sat down and mastered the process. So when my wife asked me to do a particular Christmas project I resigned myself to the fact that I would be making 50 prints from slides for the holidays. As it turned out, with a little practice, some patience and a great deal of care, the whole experience went from fright to delight. So for those of you who enter the darkroom with your slides in hand,

and trepidation in your heart, let me give you a couple of pointers that may make the whole experience more enjoyable and exciting.

The first thing to remember when making prints from slides is everything you learned about the RA-4 process is reversed. This may take a little while to get used to, especially if you do RA-4 printing, so go slow when making changes in exposure times and filtration. If a print is too dark, **increase the time**-don't decrease it as you would in Black and White or color negative printing. Increasing the time makes the print lighter in reversal printing. The same holds true with filtration. Where you would normally subtract a filter value, you now add more of it to your filter pack. This can get to be a bit confusing especially for a negative color printer, so I made up a cheat sheet, taped it to my enlarger, and referred to it before I made any color corrections.

Now then, where to start? You're using a new type of paper and a new process, so you may not have any idea of what a starting filter pack should be. Some manufacturers print suggested starting filter values on each box of paper. While this is extremely helpful, it doesn't guarantee your first print is going to be acceptable, but it's a good place to start. From working with reversal papers on this project, and from previous printing sessions, I found that a starting filter pack of 35 cyan and 20 magenta works well for your first attempt.

Your first goal is to get the print density right. Your filter pack will shift as your exposure time increases or decreases, so the goal of your first test should be determining a good exposure time that you can use as a base to adjust as your filter pack changes.

Going back to the basics, make a series of test prints at five second intervals on your paper using a piece of cardboard to block out the unexposed paper. I try to make five different segments on an 8x10. I also try to use an f/stop around 5.6 to give myself some leeway in adjusting my time after I have made final corrections to the filter pack. At the end of the test print I should have five separate densities ranging in time from 5 to 25 seconds. If you have a normal transparency, you should be able to determine a starting exposure time for your print. Remember you're working in reverse here. A longer exposure time makes a lighter print, so times that you would never use for RA-4 printing are acceptable in reversal printing.

Once you have a working exposure time, the filter pack is the next area to attack. Unlike RA-4 paper, reversal paper is a lot slower to respond to filter changes. To correct for major color shifts, look at the print and compare it to the transparency. If there is a minor shift, make a 10 cc filtration change using the table above. If the shift is more severe, use a 20 cc correction. If the shift is very severe make a 40 cc correction.

Make a second test, and then start making the final small corrections. I find that 5 cc corrections will show a difference in reversal printing where shifts of only 2 cc's show on an RA-4 print. Keep track of your filter changes as you go along, and add or subtract 10% of the exposure time for each 10cc of magenta filtration.

Don't worry about the yellow filtration, as it has little effect on the exposure time.

This is also a good time to address the questions of safelights when working with reversal papers. While reversal papers may seem slower, they are infinitely more susceptible to fogging from a safelight. This is because reversal emulsions do not have any "blind spots" in their spectral sensitivity, the way Black and White and RA-4 papers do. Keep the safelight off and learn to work by feel. Total darkness is the only safe way to handle reversal paper.

| <u>Filter Change for RA-4 Process</u> | <u>Print Color Cast</u> | <u>Filter Change for Reversal Process</u> |
|---------------------------------------|-------------------------|---|
| ADD YELLOW | YELLOW | SUBTRACT YELLOW |

| | | |
|---------------------------|---------|------------------|
| ADD MAGENTA | MAGENTA | SUBTRACT MAGENTA |
| SUBTRACT YELLOW & MAGENTA | CYAN | SUBTRACT CYAN |
| SUBTRACT YELLOW | BLUE | ADD YELLOW |
| SUBTRACT MAGENTA | GREEN | ADD MAGENTA |
| ADD YELLOW & MAGENTA | RED | ADD CYAN |

A few notes on processing may be in order. In standard reversal print processing, there are three chemical steps interspersed with washes to eliminate carry-forward contamination. They are first developer, color developer, and bleachfix. Some manufacturers also include a chemical reversal agent that is mixed in with the color developer. Other manufacturers have elected to allow the user decide if they prefer chemical or light reversal. Light reversal simply involves turning on "white" light and exposing the print after the wash following the first developer is completed.

As in RA-4 processing, contamination can put a quick and expensive end to an evening's printing session. There are several manufacturers of reversal chemistry, but for all of them, the best advice I can give is not to scrimp on wash times, and to read the directions completely before you start to process prints. Contamination of just a few milliliters of the first developer into the color developer can ruin an entire batch of chemistry. I ruined my working solution twice. The first time, I ruined the solution by not washing the print thoroughly, and the second time by omitting the stop bath and going directly to the color developer.

Working with the reversal process affords the user two luxuries not available with RA-4. After the first developer and wash are completed, the remaining steps of the process can be done in room light. This allows the user several options for developing the print. The second is that unlike traditional RA-4 chemistry, most reversal processing can be done over a wide range of temperatures.

Processing R prints in a tube or Jobo processor is the most efficient technique, as the entire process can be performed in the tube or drum. The processing steps of a pre-rinse, first developer, wash, color developer, second wash, bleach fix, and final wash are conducted in the print drum. With the Tetenal Mono R kit from JOBO, you have the option of using a chemical reversal or light reversal after the first developer.

When working on my project, I used the Tetenal Mono R kit. This product is quite flexible in processing as temperatures can range from 18°C to 28°C (64°F to 82°F). It allows the user to work with or without stop bath. It also features an agent that is added to the color developer to eliminate the need for exposing the print to light after the first developer. I elected to omit the use of the reversal additive and make the reversal by exposing the print to light for 10 seconds. I also chose to use both the stop bath and water rinse to minimize the risk of contamination.

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|---|
| Processing Steps for Mono R Using a JOBO CPA-2 Processor |
| Processing Temperature 24°C, Rotation Speed "P" |
| 1. Pre-Rinse at 24°C for 30 seconds |
| 2. First Developer for 1:30 |
| 3. Color Developer 3:10 |

| |
|---|
| 4. Stop Bath for 30 seconds |
| 5. Light reversal (removing tank lid for 15 seconds) |
| 6. Replace lid and wash 40 seconds (2 X 20) |
| 7. Color Developer 3:10 |
| 8. Stop Bath 20 seconds |
| 9. Bleach-Fix 1:30 |
| 10. Final wash 3 minutes |
| <i>* Stop bath may be re-used if the light reversal agent has NOT been added to the color developer.</i> |

Mono R can also easily be used with the Nova Quad processor and several additional processing trays. In total darkness, process your print in first developer, and then use the second slot for your stop bath using continuous agitation during both steps. After the stop bath, remove the print from the processor and place it in a processing tray with running water. At this point, the remaining steps of color developer and bleach fix can be done with the room lights on. Instructions for processing reversal prints in a Nova processor are detailed in the Tetenal instructions that accompany the Mono R kit.

Because of the wide latitude in processing temperature, R prints can also be processed in trays, providing you're able to control the chemical temperature in your darkroom. The steps outlined above will remain the same, but the times may change slightly. Always consult the manufacturer's time and temperature chart before processing. When processing in trays, make sure the print is thoroughly drained before moving it to the next tray, and avoid passing the print over other chemical trays. Any small drips from the print may cause contamination of the chemicals.

All in all, if you take some time and closely follow the directions you will find printing transparencies an enjoyable experience.

What Exposure for Proof Sheets?

By Ken Owen

You're ready to organize your negatives by making contact proof sheets of them, but you don't know what exposure and filtration to use to get a good image of each of the frames on the roll. Well, first of all, unless all your exposures are "perfect" and perfectly matched, you won't get good images of "all" of them, but you probably can get good images of most of them at the same time.

If you own an analyzer, or even a darkroom exposure meter like our Comparator 2 meter, then the process becomes fairly simple. Select an average frame in your roll of film. You're looking for one that represents as many of the roll's frames as possible. Now set up your enlarger to make an 8x10" print of that image, or whatever size your final sheet of paper will be for this. (Some folks use 8½ x 11" paper.)

The next step simply involves analyzing or metering this image as you would any enlargement. Once you've set the filtration (this requires an analyzer) and the exposure, remove the film from the negative carrier, and put it back with the rest of the film you are about to print. (I can't tell you how many times I've forgotten to remove that negative. Then, when I try to print the proof sheet, the enlarged image is superimposed over the rest of the negatives, and there is one empty row in

the negative storage page staring at me to remind me I goofed!) Now print the proof sheet at the filtration and exposure time you determined from your metering, and voila! You will have a sheet full of images ready for review.

If you don't have an analyzer or enlarging meter, keep track of your most commonly used filter packs and exposure settings for 8x10 prints. Then set up the enlarger to make another of those 8x10's, but make the proof sheet instead.

By the way, make sure you use an empty negative carrier in your enlarger when you use it as a light source for contact prints. If you don't, the light you use may have such a large amount of fall-off that the proof print will come out under-exposed around the edges.

Here's one more tip that might be of use to you. After I print my proof sheet, I 3-hole punch it, but on the "right" side. This way, when I look for a particular negative in my binders, I have the proof print on the left facing me, and the negative on the right, ready to be accessed and removed. It cuts down on flipping the print back and forth to make sure I'm pulling out the correct strip of film.

Tech Talk -

In response to reader requests, we're supplying more technical information for processes mentioned in JQ articles. Here are a couple detailed tables for reference:

User Profile, Glenn Debona's Processing Times for Kodak RA-4 on his JOBO CPP-2

Processing time and settings for RA-4 prints using Kodak chemistry. Temperature control on my CPP-2 set at 35°C, rotation speed set at 'P'.

Pre-wash - 30 seconds
 Developer (RA-4) - 1 minute*
 Stop Bath - 30 seconds*
 Wash - 30 seconds*
 Bleach (RA-4) - 1 minute*
 Final Washes (3) - 30 seconds each

I use 240ml of solution for my 16 x 20" prints on Kodak Supra II paper.
**does not include drain time.*

JOBO Processor Rotation Speeds

Here is a quick summary of the various speeds used in JOBO Rotary processors.

| Processor Model | Rotation Speeds |
|--|--|
| DuoLab | 75 rpm |
| CPE-2 | 25, 65 rpm |
| CPE-2 Plus | 75 rpm |
| CPA-2, CPP-2, ATL-1 | 20-80 (variable) #4 is approx. 50 rpm P is approx. 75 rpm |
| ATL-500, 800, ATL-1000, 1500 | 75 rpm |
| ATL-2, 2-Plus, 3, ATL-2000, 3000, ATL-2200, 2300, 2400, 2500 | Specific microprocessor controlled rotation speeds of 25, 50, 75, 100 rpm , with some exceptions on newer models. |