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User profile: # Burkhardt Kiegeland

JOBO and the Big Sheets.

As the founder of Lotus View Camera in Austria, I was invited to write some lines on my experiences with JOBO equipment. I enjoy doing this, as JOBO products have been part of the darkroom side of my life as far back as I can remember.

Photo: The Lotus 20x24" at Photokina, Germany, 1998 with Burkhardt Kiegeland (left) and Bob Shell, editor from Shutterbug Magazine (right).

Actually, the first processing tank my father bought me around 1956, together with a used 35mm enlarger, was a JOBO. Don´t ask me about the type and number. I do remember, however, a black stick which had to be inserted in the middle hole for rotating the reels, after filling in the chemicals. A couple of years later, I bought another JOBO tank designed for development by inverting or tilting. The reason was, my peers and I had become fans of the once famous "Adox KB 1" 35mm film. This film had to be processed in Beutler´s Neofin, a one-shot surface developer, which was famous at that time and is still available today, for optimal sharpness and finest grain. This drum, which had been out of use for many, many years was finally given away last week as a darkroom starter to a member of the next generation of my family.

In the late 60's my occupation with photography and darkroom turned professional. I started to earn my living as a free-lance writer of nonfiction books and was therefore in constant need of illustrations. Because my fees would have been eaten up completely by the costs for photographs from agencies, I decided to invest in equipment and learn how to make good pictures.

As a result of this decision, I spent many nights "learning by doing" in the studio and darkroom. There were times, (e.g. when I had to compensate in the darkroom for what was missing in the field, or when reshooting was unavoidable) when I realized how ambitious my idea of creating the pictures as well as the text was. It was difficult, but it worked.

During the early '70's everybody seemed to jump into color processing. There were new chemicals introduced , which developed a print in less than 10 minutes at a temperature of 38° C!

I jumped into that field too, spending many nights rolling drums at the kitchen table while keeping small bottles of chemicals in a waterbath on the stove. This procedure amused my wife and children... but at least I learned how to be very patient and tried not to count the sheets thrown into the waste basket.

Things changed dramatically when I bought my first JOBO CPP-2 processor. Suddenly it became very easy to keep the right time and temperature - and when the JOBO LIFT entered the scene, processing color in my darkroom stopped being a mess.

My CPP-2 changed my black-and-white habits as well. I switched completely to rotation for development of my rolls and sheets and never had a reason to regret this. Every now and then discussions on the advantages of the traditional inversion technique would surface. I couldn´t find

enough evidence by comparing the two systems to change my rotation routine, which works so well for me.

Looking back at the period from 1975-80, I now find another reason why I restricted myself to rotation development. I was losing interest in checking everything new on the market. Instead I found myself more involved in making pictures by working under more consistent conditions. I took the road which leads from the merely technical aspects of photography to creating images. I think, we can travel this road successfully only by developing some standard routines, and using the standard materials with which we are familiar.

For example, for more than 25 years now, I have been working with roll film using exclusively Ilford FP4(+) and HP5(+). The latter was replaced by Delta400 some time ago. I processed exclusively in Perceptol by Ilford, until I switched altogether to Pyro (PMK) three years ago.

I bought my first large format equipment around 1975; a Linhof Kardan Standard 4x5" with some Schneider lenses. I began using Agfapan 100 (later APX) processed in Rodinal using the JOBO 4x5" reels. I continued with this combination for many years.

Later, after switching to the big sheets from 8x10" upwards, my choice again was Ilford´s HP5+ (great in Pyro) which was complemented by the "new classic" Bergger BPF 200 film from France, which authorities of the large format community, like Gordon Hutchings, claim to be "a film of our own".

JOBO offers Expert drums designed for common large format sizes like 4x5", 5x7" and 8x10". I have them all. There isn't a more convenient way of processing up to ten sheets of 4x5" than using the #3010, or six sheets of 5x7" using the #3006, and five sheets of 8x10" using the #3005. The results are not special or sensational, they are simply the way they should be: perfectly even, free from scratches, no "hot edges", repeatable - nice and clean negatives you can rely on for an elaborate printing. I couldn´t wish for more - there simply isn´t anything...

My enthusiasm finally led me to buy an ATL 2000 to replace my old CPP. I had counted the hours I spent in the darkroom watching the drum and moving the LIFT and finally found good reasons to enjoy a little more comfort.

My average processing time in PMK for 5 sheets 8x10" in an Expert #3005 is about 45minutes:
3 minute prewash
10 minute development divided in 2 parts of 5min using fresh solution for the 2nd run (time may change depending on film)
1 minute stop bath
5 minute fixing (about 6:30min for T-max or Delta)
2 minute afterbath of a teaspoon sodium metaborate in 1000ml water for better staining
25 minute washing (12 changes of water) for perfect staining

After a day of taking photographs out in the field, I usually carry home a box of 25 or more exposed sheets. Using my CPP, this would mean 5 runs of processing while watching the drum spinning and working the lift without any chance for doing something else - except listening to the radio. Not a problem, one could say, if this would happen once a week - but in my practice it happens more often. So it made sense for me to invest into an ATL-2000. After each run it calls me back into my darkroom by sending out an acoustic signal. This means - emptying the drum, inserting another bunch of sheets, refilling the bottles with chemicals, pushing the button again - ready for the next run.

Things became a bit different, however, when I turned to really big negatives. Unfortunately there was no drum which would hold 5 sheets of 11x14" or even 12x20". What to do?

I bought a #3062 drum from JOBO, and added holders for two sheets 11x14". These holders can be custom made to fit any sheet film size up to 11x14" (holder list price $198.09) for the #3062 drum, and sheet film up to 16x20" (holder list price $221.70) for the #3063 drum. Just send a piece of your film to JOBO when ordering your *custom large format holder for sheet film* and a holder will be made to your exact specifications.

The PMK process was started. I was stunned when I inspected my first 2 sheets and found them to be bad: one half of each sheet showed considerably more density than the other half. The difference was about 1 stop. I tried again - same result. I checked my whole procedure - no change. In a desperate mood I switched to Rodinal, finding that my negatives now turned out just perfect. So was it the pyro? But why?

The unresolved question was a nail in my heart until I did more testing, I finally realized what actually had happened. The #3062 type of drums consist of two parts, which are glued together. In order to fit together, one half is a bit smaller in diameter than the other, which results in a little step right in the middle of the drum. This step caused a slightly uneven flow of chemicals and therefore the uneven staining of my pyro negatives only. I then realized that staining by pyro is a somewhat delicate process...

Now the problem was easy to solve. We designed special mats, made of plastic sheets with a certain grainy surface and applied specially designed cuts into this material for holding the sheets. Every sheet is fixed by just one "cut" at each corner and is allowed to have just a little "play" to guarantee an easy flow of chemicals on the backside as well. Our plastic sheets work nicely. My big negatives are now of the same standard as my 8x10"s. In a couple of drums #3062 - extended in length according to the size of my sheets - I process negatives of sizes 11x14", 7x17", 8x20" as well as 12x20".

The next challenge is waiting: At the Photokina 1998, we introduced our new Lotus Rapid Field 20x24" with motorized movements making it even lighter weight. As we sold more pieces of the "beast" than I had dreamt of, I can afford to keep one for my own use. Now the biggest sheets ever will have to be processed in my darkroom. I guess I will use a modified paper drum #3063 on my ATL 2000...

Finally, I want to spread the message about a Pyro formula especially designed for JOBO processors. It was developed by Harald Leban, a friend and platinum printer from Vienna/Austria, adopted by Carl Weese and Richard Sullivan for their book The New Platinum Print and it was called 'Rollo Pyro':

Part A:
400ml Distilled water
7.5g Metol
10g Sodium bisulfite
75g Pyrogallol
5g Ascorbic acid (Vitamin C)
7.5ml Potassium bromide solution (10%) (equal 0.75g)
2.5g EDTA-Na4
add water to make 500ml

Part B:
950ml Distilled water
150g Sodium metaborate

Working solution:
2 Parts A + 8 Parts B + 100 Parts water

Some developing times at 22°C (rotation speed 25 rpm):
FP4+ (6.0 min)
HP5+ (6.5 min)
TMax100 (6.5 min)
Lotus/Bergger BPF200 (6.5 min)

I'm happy to answer questions, along with our US-representative at the following e-mail adresses:
Burkhardt Kiegeland **bkiegeland@lotusintergate.at** John Horowy **viewcam@wwa.com**

The New ColorLine 100

By Sam Proud

One of the most challenging aspects of color printing is determining the proper color filtration for each print. Many people use the trial and error method where you make a print, evaluate it, make corrections to the filter pack, and try again. This process can be time consuming, frustrating, and costly, due to wasted chemistry and paper.

There is another alternative; purchase a color analyzer. While this choice cuts down on time and paper, a color analyzer has been expensive. Analyzers have cost anywhere from $600 to $2,000. Price can put an analyzer out of reach for many darkroom hobbyists. What's been needed for a long time is a simple analyzer with an affordable price. I am happy to say that day is here. In September, 1998, JOBO introduced the new ColorLine 100 at Photokina, a photographic industry international trade exhibition held in Cologne Germany.

The ColorLine 100 is a simple-to-use, single channel analyzer for processing RA-4 prints. Its 4mm probe can be used for spot readings such as skin tones or as an integrated analyzer for general printing. After inital set up and calibration for the type of film and paper being used, you just place the ColorLine 100 on the easel and read the LED display.

The display on the ColorLine 100 is simple to read: it consists of two sets of arrows, one for magenta and one for yellow. To find the correct filter pack, just look at the illuminated arrows and add or subtract from the enlarger's filter pack as the arrow indicates. Once the filter pack is correct, the LED arrows will go out, indicating you have the proper setting. The ColorLine 100 can't determine exposure time. Often you will find that the exposure time used when setting up your ColorLine 100 will be the same time needed to print your negatives. In some cases, the lighting in a scene may require some slight adjustments in your exposure time. For those occasions, you can rely on your experience or make a test exposure strip.

While any color analyzer can be fooled, the ColorLine 100 proved to be extremely accurate when tested. Printing several rolls of film, I found the readings from the ColorLine 100 were almost always correct when I used it as an integrated analyzer. Not being a proficient color printer, I found the ColorLine 100 not only helped me with printing, it cut down my frustration immensely and made it a joy to make prints. The ColorLine 100 suggested list price is $199.95, it is now available from JOBO dealers. Just ask for JOBO item #6240.

Reels: Plastic or Stainless Steel?

Which one is *really* the best?

by Ken Owen

From time-to-time, customers ask us whether they should choose plastic reels or stainless steel reels for the best possible film processing. As is frequently the case, the answer isn't black and white, but convoluted shades of gray. To begin with, JOBO 1500 series tanks can be used with either the original JOBO #1501 plastic reels, or with the specific stainless steel reels distributed by JOBO. That probably sounds a bit strange when you first read it, but the reason for that specific statement is that JOBO doesn't actually manufacture any stainless steel reels. In fact, the #1555 35mm reels, #1557 120 reels and #1559 220 reels are manufactured FOR JOBO. JOBO stainless steel reels are only sold in the U.S. The reason is that stainless steel reels have an older and more durable reputation here in the States than in many other parts of the world. The phrase "surgical quality stainless steel" popularized metal reels back in the 1950's and 60's.

The reality is, that the qualities that make stainless steel popular for surgical instruments have little benefit for photographic use. Stainless steel reels (and tanks) transfer heat more rapidly than plastic. That's another way of saying they will warm up or cool down faster than plastic reels (or tanks). For film processing, temperature stability is a better characteristic than fast temperature changes. So while plastic tanks and reels take longer to get to the "proper" temperature for processing, they also stay there more reliably than stainless steel.

Stainless steel is NOT impervious to many photographic chemicals. Specifically bleach and bleach/fix used in most color processes will eventually eat through 316 grade stainless steel. Granted, it won't happen overnight, but most commercial processors today are made with PVC tanks rather than stainless steel for this reason.

Most stainless steel reels, if dropped, generally become useless. Once the metal spirals become bent, it is virtually impossible to reshape them back to their original position. Plastic reels, if made with the right materials, will withstand the impact of dropping (not throwing), and the spirals will "bounce" back to their original position. (JOBO stainless steel reels are made of a heavier gauge material than most other reels. The result is they are less likely to be damaged by dropping, but they will still bend when plastic would spring back.)

Loading either reel type is the source of many debates. It is generally conceded that loading stainless steel reels is somewhat more difficult to master, especially for 120 or 220 film. But once mastered it is generally possible to load a stainless steel reel in about half the time of a plastic "walk-in" reel. Also since stainless steel reels are loaded from a clip or teeth in the center of the reel, and then wound around the center, rather than sliding along the spirals as in plastic reels, they are less likely to be affected by humidity than plastic "walk-in" reels.

Stainless steel reels cost substantially more than plastic reels. You can generally count on double or triple the price of plastic, when purchasing a quality stainless steel reel.

However, the actual processing characteristic differences are probably the most important factor to consider. There are virtually none. That's right! Both JOBO plastic and stainless steel reels will result in high quality film processing. Neither one has a distinct qualitative advantage.

The reason that "our" stainless steel reels must be used in JOBO 1500 series tanks, is that a stainless steel center core must be used in the tank when using stainless steel reels. The center

core is ESSENTIAL. Without the reels fitting snugly on the center core they would be loose in the tank. Then as the tank rotates, the reels would sit still, leaving only part of the film immersed in the solutions. The rest would remain unprocessed. Since most other brands of reels will not fit on our center cores, only JOBO stainless steel reels #1555, #1557, #1559 will assure you of proper performance. It is also essential that the stainless steel reels be used with the JOBO Lift. This is because the funnel-shaped light trap must be plugged to prevent light leaks. This interferes with the ability to pour in chemicals when the tank is in an upright position. All of the necessary parts come with each center core.

Speaking of center cores, there are four different center cores available:
*#1561 is for 1 reel of 35mm film or 1 reel of 120/220 used in a 1520 tank.
*#1562 is for 4 reels of 35mm film or 2 reels of 120/220 film in a 1540 tank.
*#1563 is for 5 reels of 35mm film or 3 reels of 120/220 film in a 1520 + 1530.
*#1564 is for 8 reels of 35mm film or 5 reels of 120/220 film in a 1520 + 2x1530.

You might have noticed that we can only process one stainless steel reel of 35mm film in a 1520 tank, which would normally hold two reels of 35mm using our plastic #1501 reel. The reason for this is the design of the light trap in our tanks. The funnel shaped light trap was designed to insert into the top of the plastic center core, out of the way of the plastic reels. However, the center of the stainless steel reels is much smaller, and the tip of the funnel interferes with getting the "full" capacity of the tank, but only in the #1520 tank. In all the other combinations, the quantity of reels is the same whether using plastic or stainless steel.

Lastly, when using stainless steel reels in JOBO 1500 series tanks, it is necessary to use more chemistry volume than with our #1501 plastic reels. This is due to the smaller center diameter of the reel. Our plastic reels have about a 1" center core. The stainless steel reels have about a 1/4" center core. This means that the chemistry must be higher in the rotating tank just to cover the film. Hence, instead of 240 ml in a #1520 tank, you will need to use 270 ml. Not a big difference, but noticeable.

So which one *really* is better? If you are already comfortable with loading stainless steel reels, you will be amazed at how easy our 35mm #1555 reels are to load. If you prefer plastic reels, or you have no previous preference for either material in reels, try our #1501 reels. They are easy to load and very economical. Choose whichever reel type you prefer, they both work great!

Seasonal Darkroom Preparation

By Ken Owen

It’s the darkroom time of year once again. It’s getting cold enough for you to want to stay inside, unless you see some exceptional winter picture possibilities. You’ve probably not spent quite so much time in your darkroom since early spring, and now you are ready to spend a long winter’s night printing up all those photos you shot all summer. But when you look into your darkroom, you discover it has become a new source of storage space. It’s time for FALL CLEANING!

Do the easy things first. Dump out all those mixed chemicals that have been sitting around for months. Especially if you forgot to label when you mixed them, and what they are. If the developer bottles are really grungy, cleaning them may be fruitless. Toss them out and get fresh ones. If the fixer has deposited sulfur on the bottom of its bottle, toss it too. Once that gunk gets into the bottle, you’ll be forever trying to get rid of spots on your film. If you properly stored your chemical concentrates, using Protectan in the developers for instance, they should be okay.

Dig out your processor and look it over closely. Did you forget to drain it out when you finished using it several months ago? If so you'll probably need to clean out its various chambers and tempering baths. Get out the Processor Clean II (4 oz. # 4136 or 4.7lb #4135) or Color LabCleaner (#109550) and clean it up. It is more enjoyable working with a clean processor, and you'll get better results on your film and prints, since you won't be fighting off those unidentified life forms and the schmutz they generate.

Now check out your enlarger. Did you protect it with a dust cover? Probably not. Take off the enlarging lens and clean it. Spray it with Ultra Clean (1oz #309091, 2oz #309092) and wipe the elements with lens tissue or an Opti-Cloth (#109584) to get it really clean. Then start taking your enlarger lamphouse apart and clean all the illuminating surfaces in there. That includes the diffusers and condensers, and just about anything short of the lamp itself.

Go through all those negatives which you so carefully stored in negative sleeves and pages, but then tossed on the counter in the corner. Now is a good time to file them so you will be able to print them later. After you get ready to process prints again, make proof sheets of every roll and file the negatives with the proof sheets. I find that punching the print to fit in a 3-hole binder, with the proof sheet facing its negatives makes it real convenient to find them when I want them. With the print on the left and the negatives on the right, I don't have to keep flipping pages back and forth to find the negative I want to print.

If you are like most of us, you probably started using your darkroom before you completely finished all its details. Take some time now and finish those details. Add light switches for the safelights so you can reach them when you are at the enlarger. Mount the enlarger to the wall so it won't vibrate. Do whatever it takes to make your life more pleasant in the darkroom.

Now sponge down all the countertops and mop the floor. You've got to get rid of all that dust BEFORE you start printing.

At last you are ready to begin processing and printing your pictures. You can move into the darkroom for the rest of the cold weather seasons and get productive with your images. Now excuse me while I go follow my own advice and clean out my darkroom. Does anyone know where I can rent a small bulldozer to clean up that mess in there?

Winter Darkroom Tips

By Ken Owen

As the seasons shift, things obviously change outdoors, but have you ever noticed the changes that occur in your darkroom?

Static - As the air inside gets drier, it becomes much easier to encounter static in your darkroom. Make sure that you unroll exposed (but not yet processed) film carefully and perhaps a bit slower than you would in the summer. If you unroll it too fast you can get sparks which will show up in your film as little lightning bolts.

Dust - As the static increases, so will your dust problem. The film will start to attract dust like a magnet. You will need to try either an antistatic dust brush, or an anti-static treated cloth like the Tetenal #109581 or #109582 Anti-static cloths. (The #109581 is larger than the #109582, but in

other respects they are the same.) Just wipe the film with the anti-static cloth and the film will actually repel dust.

Film and print washing - Watch your water temperature! Your cold water is probably a lot colder now than it was 6 months ago. Don't just set the water valves the same way you did then. Measure the temperature. If the water is too cold, it won't wash the fixer effectively. If it is too hot, it can damage the film or print materials.

Film drying - Again, with the heat turned on, the air is drier. This will allow your film to dry faster than it did in the summer. If film dries too fast, it gets curly. So if you are using a heated film dryer, turn down the heat. The slowest, gentlest drying is best for your film.

Ambient temperature processing - Especially if you have forced air heat and/or air conditioning, the room temperature may be different than it was 6 months ago. Some basement darkrooms are cool in the summer and warmer in the winter when the heater is running. Check your temperatures here again, to make sure you process correctly for the conditions.

It is possible that your water coming in from the municipal water system is chemically different than it was in the summer. With colder weather, the water company doesn't have to add the same assortment of chemicals to avoid biological growths. Occasionally, though not often, this can affect the results of your processing. The winter water would be considered more "normal" than the summer water with its greater likelihood of additives to protect the safety of your drinking water, simply be aware that the water can affect your process results.