



## User Profile: David Belew

### **I've processed 18,000-20,000 rolls on my CPP-2!**

This is not so much an article about myself as it is a testimonial on the durability and use of the JOBO CPP-2 processor.

I first saw (and was sold) my CPP-2 in late 1981 or the first part of 1982. To me, it appeared to be a tool to do two specific jobs—I hoped. At the time, I had been running a one man B/W custom lab for nearly two years. I was in need of a processor that would be capable of processing both film (B&W) and Ilfochrome, called Cibachrome at the time.

When I saw my first JOBO, I thought, how could this red and black plastic apparatus possibly do the job? It certainly did not look very sturdy, to me sturdy was a unit made of polished 316 stainless. Needless to say, I was very skeptical. I took the dealer's demo home for a trial run, and obviously I made the plunge and have been processing ever since.

For the next 3½ years I processed between 80 to 120 rolls a week plus Ilfochromes through this machine. Following this period, I went to work for the dealer who sold me the CPP-2, in sales, primarily in the darkroom department. (Selling JOBO of course). It just so happens that a customer by the name of Joseph Holmes, bought his first JOBO CPP-2 upon my recommendation. (See Joseph Holmes, Outdoor Photographer, in JQ Issue #5.) I retained a few of the Pro's I processed for, still running 20-30 rolls a week. In 1988 I had a serious injury to my back and, following surgery, I had to cease any darkroom work for about 3 years. In January 1992, I was semi-retired and moved to scenic Mendocino, CA., also known as "Cabot Cove" in the Murder She Wrote TV series.

I still do some custom B&W work for a few local pro's, plus some Pro-Bono work for a local non-profit museum.

At this time, I estimate that I have processed between 18-20,000 rolls of B&W film through this machine. The total repairs to date have been one motor drive and one cog wheel. The tanks and reels are nearly indestructible. Since 1981, I have broken exactly one cog lid and one reel. I stepped on both of them in the dark, at the same time.

As for myself, I am mainly self-taught, with a few evening courses and workshops thrown in. I developed my first roll of film in Korea in 1956, and haven't stopped since. I have photographed on a professional basis since the early 70's, at first on a part time basis and then full time since 1980. Aside from my lab business, my professional work has been in dance photography and small to medium sized product work mainly in B&W. My personal work is mainly landscape and still life photography.

My present darkroom is 8½ x 13½'. Into it I have crammed:

- 2- Omega D 5's 1- Omega B8
- 1- Elwood 5x7 1- Bencher copy stand
- 1- Seal 210 dry mount press 1- Chromapro slide duper
- 1- home made film/paper dryer 1- 60" sink

- 1- converted E-6 line as a base & water control for the JOBO
- *For camera equipment I use:*
- 35mm Contax RX + G1 Mamiya 645
- Mamiya RBSD Horseman LB 4x5
- Toyo 4x5 field (Original)

*My preferred films are:* Ilford FP4+, TMY, TX, TXP, and VP120 for copy work.

*My preferred papers are:* Ilford's MGIII (both glossy and pearl), MG fiber, and Seagull panchro for color negs.

My film processing procedures do not follow the JOBO recommendations to the letter. They are:

- 1.) I use only 2500 series for 120 and 4x5.
- 2.) I use only 1500 series tanks for 35mm.
- 3.) I always have on hand enough developer stock and tempered water in case of a power failure.

Note: Since the nominal pH of my (well) water runs between 6.1 to 6.2, my water is buffered in a water conditioner with calcite, same as bicarb soda, to a pH of 7.0 to 7.1.

My film processing steps are as follows:

- 1.) 5 minute presoak in 72°F water
- 2.) Process at Mfg. recommended times for 72°F (approximately 85% of the 68°F times)
- 3.) I use a speed setting at "1", one notch under "F". This seems to minimize the "Bromide Drag Factor"
- 4.) 30 second rinse
- 5.) 30 second stop
- 6.) 30 second rinse
- 7.) 7 and a half minute fix for "Non-T grain" films
- 8 and a half minute fix for "T" grain films
- 8.) Six 30 second rinses.
- 9.) Normal wash times off of the JOBO CPP-2 in the processing drum

Notes:

- 1.) I normally use ID11, 1:1 for most films.
- 2.) For pushing I use Microfin or TMAX
- 3.) My processing times will probably vary quite a bit from yours for several reasons, primarily due to my water supply. For example, when I moved here from San Jose, CA I had to increase all my times by 20%. The pH of my water in San Jose ran between 7.6 to 8.0.
- 4.) I also found it beneficial to segregate the fixer between "T" grain and normal films. I get 10 films a liter for "T" films and 15 films a liter with other films.
- 5.) My development times at 72°F are:
  - a. FP4+, VP120, PXP, Agfa100 is 7 ¼ minutes.
  - b. TX, TXP is 9¼ minutes
  - c. TMX, TMY, Delta400 is 10¼ minutes
  - d. HP5+ is 11 minutes

My choice of using 72°F for a temperature came as a result of the introduction of T-max films.

At the time (1983-84) I ran many, many tests on this new film. When I settled on 72°F for the new films, I decided to test all films at this temperature. Guess what? All of a sudden I was getting finer grain, better sharpness, better shadow detail, better highlight detail...better prints. However,

if you are going to process at a higher than normal (68°F) temperature, all the solutions must be at the same temperature.

My test procedures are quite simple. I made 16x20" test target on a dark gray mat board, including a Kodak Gray Scale, 5 different 6x6 boards representing Zones VII, VII, V, II, and I, plus some lens test targets. Photographing this target under controlled lighting, processing the film, and subsequently making an 8x10" glossy on #2 paper. When I can print the resultant negative and get a print which reflects all the 10 scales, and the balance of the print is O.K. then that time and temperature are what I use.

In closing, photography has been a lot of fun...even when it has been work.

## **Feature Article: The DuoLab**

*By Paul Rowe, Technical Manager*

### **A Unique Combination of Rotary and Slot Processing**

At the last PMA Show, February 1995, we introduced the new DuoLab processor to the U.S. market. Naturally before introducing the DuoLab, it seemed wise for us to have a little hands-on experience, so I took a model into the darkroom and started to work. You all know the admonition and warning I give people, both in writing

and in person, that one must always read instructions first. Well, of course, I did not follow my advice, giving the instructions no more than a cursory glance as I set them safely aside so they would not get wet. As most of you have learned, there are some devices that can be treated this way with no problem. Later you can go back and get the official line by reading the instructions. NOT SO WITH THE DUOLAB. There are several procedures required as you ready the machine for use, and you will not figure them out without the help of the instructions; but more about that later.

The size is inviting, a little less than 18" x 22" x 10" high, and the weight is easily managed at about 15½ pounds. It comes with 4 bottles, a single reel film tank and reel (actually a #1510 tank and a #1501 reel with a special Cog Lid for the DuoLab), a paper grip for use with the slot processor, a funnel, rollers, and assorted other small essential items.

The first thing I wanted to do is make the DuoLab heat. This seemed like a simple task but please refer to the phrase in capital letters in the second paragraph! A quick glance at the manual pointed to filling the unit with water utilizing the built-in funnel on the Range Switch. However, a more thorough reading of the manual pointed out the need to bleed a line in order to eliminate air and completely fill the chamber. Once I followed the steps in the manual the DuoLab worked just as designed.

Next on the agenda was filling the "deep tanks" of the slot processing section. There are four deep tanks, the first three being temperature controlled while the fourth is ambient temperature but is affected by the heated tank next to it. This procedure is straightforward: using the funnel and holder fill each of the deep tanks with approximately 1 liter each of developer, then stop bath,

and finally bleach-fix. The fourth deep tank can be filled with tempered water. Turn the Temperature Switch to 35 °C. Now you need to use the temperature range switch, which surrounds the funnel used for filling the water jacket. Again, you need the instructions! There are three positions on this Range Switch: the #1 position directs heat to the slot process section, #2 directs heat to the front water bath, but allows only the heating function to operate, #3 directs heat to the front water bath and turns on the rotation motor. Since I wanted to use the slot processor I turned the Range Switch to #1.

If you follow the instructions it will take about 15 minutes to heat the deep tanks from room temperature to operating temperature of 35°C (assuming you are doing RA-4). I cheated here and used chemistry that was preheated. All I had to do was wait for the temperature to stabilize.

My initial prints were RA-4, so the developer-stop-bleach/fix-wash set up of the slots was perfect. Of course this same sequence was also OK for the black and white which I processed later, with the temperature set at 24 °C. Since the fourth slot is a wash, but not running water, you really need to do your complete wash outside the processor. I used a tray to complete the wash of the RC papers, but you can really choose whatever other means you have available. Several customers have asked about the use of Ilfochrome or R-3000 for this processor. Personally, I have not tried them, but with care taken for the washes, and caution to prevent contamination there should be no difficulty.

The method of agitation, and holding the print during processing bears mention. Supplied with the machine is a "paper grip" which uses a series of small suction cups to hold the print. Attach this to the back of the print just before inserting into the developer bath. Insert the print, emulsion side down, into the developer, and with the paper grip agitate in a circular motion. At first I was skeptical of the emulsion side down routine, but there is no trouble or hint of emulsion damage in all of the prints processed. A timer which is activated by the temperature switch is built into the machine. It emits a beep approximately every 45 seconds, and my younger associates assure me that it is audible. My old ears do not perceive higher pitched sounds, so for safety I used a Gra-Lab Timer. The point is you can use the built-in timer, or whatever other timing method you have available and are comfortable with.

Practice quickly makes the slot processor a comfortable piece to use. The prints are great. No marks appear on the prints from the paper grip, and nothing gets in the way of the printmaking. Nothing, that is, except my ability to deliver a properly exposed paper to the developer.

## **THE ROTARY PROCESSOR SECTION**

The front half of the DuoLab is the rotary processing section, and set-up for this goes fast. There are bottle holders, and four bottles supplied. Fit the holders into place on the studs on the floor of the front section, and place the bottles in the holders. If you know what process you are going to do first, fill the bottles before you place them in the holders. This way they will heat with the water bath you are going to create.

Next, fill the front section with water. There are two water level lines, a higher line for use when processing film (1500 series tank), or a lower line to fill to when processing 11x14 paper in the auxiliary #2834 drum. Since my first film was C-41, I filled to the higher line so that the one reel 1500 series tank would bathe in water as it rotated during processing.

The process temperature must be chosen. I went to 38°C, and then the Temperature Switch must be adjusted to heat the front bath. This is #2 on the Range Switch. While the bath is heating you can load your film. Of course you can hasten the process by using preheated chemistry and water. The warm-up time from 20°C to 38°C is about 90 minutes. Processing should not be started until the developer bottle temperature has been checked and found stable at the processing temperature.

The DuoLab comes with a single reel tank for 35mm (this is the same as a #1510 tank in the Jobo system, except that it has a special lid #95544). A #1520 tank can also be used with the special lid to process 2 rolls of 35mm or 1 or 2 rolls of 120. The #1520 tank is an option for the DuoLab, as is the #2834 Paper Drum which allows the processing of 1 sheet of 11x14" paper. As might be expected, some customers have looked at the DuoLab and immediately started to figure greater volumes of film production. The #1520 tank is the largest that should be used. Two reasons for this, 1) the small bottles supplied do not have the capacity to allow the tempering of greater quantities of chemical necessary for the larger film tanks, and 2) the unit was designed for the two reel tank, and larger quantities (read weights) of film and chemical will over-stress the motor .

Once you've loaded the film in the tank perform the following steps:

- Place the rollers in position to support the film tank.
- Change the range switch to position #3- Temperature control with motor.
- Unscrew the cap from the developer bottle.
- Screw the film tank onto the solution bottle and remove the tank/bottle combination from the water bath.
- Invert the tank bottle combination so that all of the solution flows into the tank.
- Place the tank/bottle combination on the processor with the lid engaging the drive gear.
- Start your timer.

At the end of the time for the step remove the tank/bottle combination, drain the solution back into the bottle, unscrew, and move the tank to the second bottle.

Continue this routine through the process. Fill the unused bottles with water for the rinsing process. I find it is easier to have a supply of tempered water in graduates, and perform the multiple washes with these.

During the time I was using the DuoLab, I processed RA-4 Color Prints, Black and White Prints, C-41 Color Negatives, E-6 Transparencies, and Black and White negative film. All of the results were excellent, and as with most new machines, growing familiarity made the task easier. It doesn't take long to feel at ease with the DuoLab.

There are few accessories to add to the DuoLab. There are no other tanks or drums in addition to the two reel film tank (#1520), and the 11x14" paper drum (#2834) as mentioned earlier. The water bath will hold a total of seven bottles. Four bottles are supplied with the processor. Extra bottles (#4056) and bottle holders (#07290) are available.

I found that the DuoLab was easy to get used to. Results, be it from the slot processor or the tanks/drums, was equal to other Jobo processors. The DuoLab is a real advantage for those who want both film and paper processing with an accent on 8x10" prints. The only small downside was the limitation of two reels of 35mm, or one roll of 120 in film processing, but most of our manual processor users do not stress the machines they own by always processing the maximum number of rolls possible. For anyone starting with darkroom work, or who wants to semi-automate themselves with temperature and agitation control. the DuoLab is a perfect starting point.

## **Article II: Where Do Slot Processors Come From?**

*By Robin Whetton, Nova Darkroom Equipment*

When I stand staffing exhibitions an often asked question is "Who Invented the NOVA?"

The true answer is: I did.

Ten years ago the more I got involved in my hobby of photography the more frustrated I got. All the times I wanted to get into a bit of color printing, I had to either make a load of chemistry to fill my 11x14" trays, or face a lot of washing and drying of drums, which would ensure I got fine prints, but required mixing up a lot of messy chemistry to get started.

Sitting in my local pub I was bemoaning to a friend of mine the difficulty of producing any volume of prints without spending hours in the darkroom- doing all the husbandry involved in printing but getting very few prints finished.

He listened carefully then entirely agreed with everything I had said. A fat lot of good all my talking did, I was looking for answers to my dilemma, not confirmation of my predicament.

The more I talked and examined the state of the then current processing systems with my friend, the more it became clear that no system available on the market at that time fulfilled the criteria that "making prints should be EASY."

At that moment a small spark ignited in the hearts of my friend Graham and myself, we would work together to improve the printing systems currently available. Graham and I had full-time jobs so any research had to be done during evenings and weekends. We used to meet 2 or 3 times each week to compare notes on which way to tackle the problem. Every weekend was spent talking, drawing, thinking of ideas and then throwing them away.

At last some logic started to creep into our strategy:

Upright trays...that's the answer, small surface area, very low oxidation & evaporation. Textured surface to stop prints sticking. Make it out of Plexiglas so the chemistry can stay in the processor for extended periods of time.

Use indirect heating via a water bath to stop temperature fluctuation.

Fit small taps at the bottom of each slot for a clean, accurate replenishment system.

So by now the NOVA processor was really taking shape, all our buddies down at the local camera club were interested, maybe Graham and I had a business?

Time to "GIVE UP THE DAY JOB" well not just yet!

How do we hold the paper? Lots of systems had been tried. Frames, naw, thermal shock where the metal touched the paper. Nylon frames, naw, could not keep clean and temperature loss due to the mass of plastic.

Well Graham and I were drawing on napkins in our local burger bar when the thunderbolt struck! While staring at the menu holder the menu transformed itself into a photographic print!! Yes, our unique high tech print clip is derived from a burger bar menu holder!! Turned upside down and fitted with 2 Photographic stainless steel pins.

The design has, of course, undergone a number of changes. The heaters are now exclusively made for us using state-of-the-art chips and only the best PCB's around. We are still Darkroom workers as are all my sales staff, we have to be. I believe in evolution not revolution, so all the improvements have to be proven in the darkrooms at work as well as at home, it must be a widget that works before we will incorporate it into our machine.

Let me tell you a very short story:

To celebrate our ten years in business we got in touch with our very first customer and he still had his NOVA processor! We made a special "GOLD" processor for him to show our appreciation of his support all those years before. When it came to the presentation he really did not want to part with his original Nova. "It was like an old friend and was part of his family" when I look at the pictures now you can see his white knuckles gripping "His" Nova.

People just love them!

As the company has grown it has necessitated my traveling first all over Europe to establish Export customers and as the word spread even, further afield.

This has culminated in the alliance we formed with JOBO Fototechnic.

Let's end by saying that to be able to do business with the friends we have found at JOBO is a constant source of lasting pleasure.

## **Article III: Improving Maximum Black**

From *Mastering Black-And-White Photography* by Bernhard J. Suess.

The series of exposures, such as 2 second intervals at f/11, for the maximum black test (or any test print) will give you a very close exposure setting to start. But this is only approximately the correct print exposure. You can be incorrect by a second or two or exactly right. Part of the reason depends on whether the individual errors cancel themselves out or amplify each other.

In theory, the biggest error occurs because of timer accuracy and repeatability. Unless it is an exact 2 seconds it will gradually accumulate any errors. For example, if the timer is set for 2 seconds but actually giving an exposure of 2.4 seconds the series will be

- 2.4 instead of 2
- 4.8 instead of 4
- 7.2 instead of 6
- 9.6 instead of 8
- 12 instead of 10
- 14.4 instead of 12

You can see that by the fifth exposure (12 seconds on the incorrect timer) the test is already as dark as the sixth exposure on the good timer. Choosing that exposure - 10 seconds rather than the true 12 second - would result in a print lighter than you'd expect. In the same manner, an interval exposure of 1.8 seconds will mean you choose a longer timer setting than you should, and the resulting print will be too dark.

In both cases the best recommendation is to use an electronic timer, if possible. If that is not possible, you should remember that the maximum black test is a *guide*, to help you get as close to the proper print exposure as possible.

I've used an electronic timer for over 10 years. Recently I tested its accuracy, and I found it was repeatable to a thousandth of a second. Essentially, it gives me exactly the same exposure every time. Although an electronic timer is more expensive than a mechanical one, it's the single best means of getting repeatable results in the darkroom. An electronic timer is not an expense, but rather an investment in quality.

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## **Tips & Techniques**

*Provided By Nova Darkroom Equipment, Warwick England*

### **Useful Tips For The Processing Of RA-4 Color - For Nova Processors**

- 1.) Due to the high speed of this RA-4 process, use a 2% acetic acid stop-bath between developer and bleach/fix.
- 2.) RA-4 is best processed in a processor with three or more heated baths (i.e., Trimate, Clubmate or Quad.)
- 3.) If there is no running water available in the darkroom consider using the Quad processor. Use the 4th slot as a temperature controlled dip rinse. With this method test prints can be produced without the need to leave the darkroom. After processing, move the good prints to running water and wash properly.
- 4.) When setting up a Nova Processor, fill the water cores and the chemical slots with water. Next, set the temperature knob to the desired temperature. Allow the processor to heat until the LED's on the heaters are flashing and then wait for one more hour. At this point, utilizing an accurate thermometer, measure the temperature in the first slot. The calibration on the temperature control is only approximate, variables such as room temperature can affect it. Due to this it may be necessary to adjust the knob until the temperature, as measured in the first slot, is accurate. After each adjustment, wait for the temperature to stabilize before making further adjustments.
- 5.) When finished with the calibration, unplug the unit, drain the water from the chemical slots, and refill with the chemistry. (*A/ways* unplug the processor before draining the slots or the water cores.) Draining the chemical slots also washes away any dust particles from shipping.
- 6.) Although we designed the processor to be left on continuously, we do not recommend this for safety reasons. Regular users can purchase a plug-in programmable timer that assures the unit is always up to temperature when needed.
- 7.) Magenta or blue stains in the area of the print clip are normally caused by exhausted bleach-fix. The cause is under replenishment between processes. If you experience this problem, drain half the bleach-fix from the slot and refill with fresh bleach-fix. This should eliminate the problem.



8.) Criss-cross hatch marks on prints (similar to the pattern on the tank walls) are caused by insufficient agitation of the print or under strength development chemistry. If you experience this problem, try making another print but agitate it continuously for the full 45 seconds. If this does not solve the problem, drain half the developer from the slot and refill with fresh chemistry.

### **Useful Tips for the Processing of R-3000 Prints in a Nova Processor**

1.) The R-3000 process incorporates first developer, color developer and bleach-fix solutions. In the R-3000 process, first developer can easily contaminate color developer by neutralizing the color developer. For this reason, it is very important that there be a minimum two minute wash between the first developer and color developer steps. This wash need not be tempered, a cold water wash will suffice.

2.) If you are using your Nova processor in a room without running water, it is possible to dip-rinse the print for 30 seconds in a tempered water bath. You can then move the print to a running water rinse to complete the wash between first and color developers. The lights can be turned on after the 30 second dip-rinse. After the full two minute wash is completed, you can bring the print back to the processor to complete the color developer and bleach-fix steps.

3.) If you are experiencing a lack of detail in the light areas of the prints and the problem worsens with each print made, it is probably due to contamination of the color developer. Correct this problem by replacing the color developer with fresh chemistry and increasing the wash time between the first and color developers.

4.) It is possible to process R-3000 material in a Nova Clubmate processor. (The Clubmate has three tempered slots and one running-water wash slot.) To process R-3000 in a Clubmate, use the following sequence:

- Slot No. 1 First Developer
- Slot No. 4 Running Water Wash \*
- Slot No. 2 Color Developer
- Slot No. 3 Bleach-Fix
- Slot No. 4 Running Water Wash

\* The second step requires moving directly from slot 1 to slot 4. This procedure could allow the possibility of first developer dripping into the color developer slot. To protect from this contamination hazard, place the tubular lid over the color developer slot before starting the processing of the print. After the print has been in the wash for 30 seconds, you can turn the lights on. The print should remain in the wash for at least two minutes. When the wash is complete, remove the tubular lid from the color developer and continue processing the print in the color developer step.

5.) It is also possible to process R-3000 material in a Nova Quad processor. (The Quad has four tempered slots.) To process R-3000 in a Quad, use the following sequence:

- Slot No. 1 First Developer
- Slot No. 2 Dip Rinse \*
- Slot No. 3 Color Developer
- Slot No. 4 Bleach-Fix

Running Water Wash (External to processor)

\* Place the print into the Dip Rinse for at least 30 seconds. At that point you can switch on the lights and move the print to running water wash to complete the 2 minute, intermediate wash. After completing the wash, return the print to the processor and continue the process with the color developer step. You must do the final wash external to the processor since the Quad does not incorporate a washer. The Nova Vertical or Rapid Washers are designed just for this situation.

The water in the dip rinse (Slot No. 2) should be changed every six prints to remain effective.

### **Useful Tips for the Processing of Ilfochrome Classic Prints in a Nova Processor**

The sequence for processing Ilfochrome Classic in a Nova Processor is as follows:

- Slot No. 1 Developer
- Slot No. 2 Dip Rinse \*
- Slot No. 3 Bleach
- Slot No. 4 Fix

Running Water Wash (External to processor)

The Nova Quad Processor (four tempered slots) is designed for the above sequence. Like with R-3000 processing, an external washer is required. The Nova Vertical or Rapid Washers are designed just for this situation.

#### Chemistry

The recommended chemistry for processing Ilfochrome Classic in a Nova Processor is P30P. P30P is supplied as a powder except for the fixer which comes in a liquid concentrate.

#### Material

P30P chemistry will process all Ilfochrome classic papers. The latest generation of these materials is:

CPM, 1M - glossy RC paper  
CPM 44M - Pearl RC paper  
CLM 1K - Supergloss polyester

#### Process Temperature

P30P can be used anywhere between 20°C and 29°C. To shorten the processing time, we recommend processing at 29°C.

#### 20°C, 24°C, 29°C

- Developer - 4, 3, 2
- Rinse - 30 sec, 30 sec, 30 sec
- Bleach - 4, 3, 2
- Fix - 4, 3, 2
- Final Wash

#### Agitation

Ilfochrome Classic thrives on agitation. The most important step in this respect is the bleach, which needs vigorous agitation, especially during the first 30 seconds.

### Replenishment

P30P Chemistry is not a truly replenished system, however, the tank chemistry will last much longer if fresh chemistry is added at the rate of 75mls per 8x10 print. It's difficult to say how long the chemistry will last like this and it is best to judge it for yourself - watch for an increase in contrast and gray whites (retained silver).

### Problems That Are Easily Avoided

Contamination - Ilfochrome chemistry will tolerate a certain amount of forward contamination (dev. into bleach etc.) but will not survive back contamination (bleach into dev.). The worst contamination is fixer into bleach. When this happens the bleach will turn yellow and smell of sulfur dioxide. It is common to see droplets of contaminated chemistry on the surfaces between processor slots. This must be wiped off between prints. If any contamination occurs in the tank, you will have to empty the chemistry and start again.

### Yellow Edges

This effect is caused by a lowered agitation level when the print is lifted out of the bleach. If there is too much lifting the top of the print will look yellow. A circular agitation method is usually the cure, but in extremely hard water areas it may be necessary to add a wetting agent (to the dev) to prevent the problem. If you have to use a wetting agent, use Ilford Ilfotol as it is the only agent that will survive in an acid solution.

### Contrast Control

Most good quality transparencies will print onto Ilfochrome without any problems, however, if your photograph is a very high contrast (i.e. a black steam train coming out of a tunnel into strong sunlight) you must expect to lose something. The best way of printing these kind of images is to expose for the highlights and burn in the shadows.