

Lith Printing with Fotospeed LD20

Instructions

What exactly is Lith printing?

Lith printing is a very rewarding printing technique, producing effects ranging from subtle and delicate to the outrageous. The process, however, is somewhat time consuming and frustrating as it is difficult to control and images are almost impossible to reproduce exactly. Lith prints can produce wonderfully delicate, soft highlights at the same time as high-contrast characteristics in the lower tones, and the effect can be striking. Alternatively, high-contrast and heavily grained images can be created, each depending of the technique employed.

To produce a lith print, negatives are overexposed onto lith paper and then developed using lith printing developers. Lith development is an infectious process, meaning that as soon as shadow tones begin to develop, the rate of their development will constantly multiply until an almost explosive rate of acceleration is reached in these areas. As soon as shadows reach the desired depth, the image must be snatched from the developer and placed directly into stop bath, after which the print should be fixed as usual. Lith printing has nothing to do with printing from lith negatives.

Additional Items needed:

- Usual darkroom equipment (enlarger, printing frame, trays etc)

Producing a Lith Print:

1) Place your negative in the enlarger and focus as usual, and greatly overexpose the print. Exposure times for lith prints should be about three stops over that used in regular printing, so create your test strip accordingly. A good exposure to start with being f8 and 45 secs exposure. You will notice that the shorter the exposure time, the greater the contrast level and the longer the exposure the softer the contrast, and also that the image remains very cool toned. Overexposed (and underdeveloped - i.e. snatched early) exposures will create images containing a full tonal range of warm, golden-pink hues.

2) Mix your Fotospeed LD20 lith developer: 15ml-Part A to 485ml water and 15ml-Part B to 485ml water then mix both parts together to make the working solution.

Slide your exposed paper into the solution. Depending on temperature (increasing temp does speed up the development with virtually no negative effect), dilution of developer, and exposure time, development will take from 5 to 25 minutes. Agitate the image constantly during development to avoid uneven marks. The developer is very weak and thus has a very limited capacity. With a litre of this dilution do not expect to get more than three

8x10in prints from the developer. Throw it and make up some more.

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3) As soon as shadow areas reach the desired depth, snatch the print from the developer and slide it swiftly into the stop bath. Do not leave the image out of the developer to drain before stopping as development will continue, and the crucial moment of shadow depth will have passed.

4) Fix the print in FX20 diluted 1+4 for 1min

5) Wash the print for 30 min in running water.

You have now produced an authentic lith print!

Problems and Solutions:

Brown specs and fingerprints show on the image

Lith paper is incredibly sensitive, so any imperfections on the sheet will become visible during development. Touch the paper as little as possible prior to development.

Black pepper-like flecks appear all over image

Use sodium sulphite or potassium bromide in conjunction with the developers, as described in further detail below (Tips: Development)

Image is not warm toned

Add a little exhausted developer to the fresh solution, or use well used solution.

Increase exposure time /

Decrease strength of developers

Tips

Development

The colour of a lith print depends primarily on the grain size in the paper's emulsion. In the early part of development these grains are fine and a variety of warm tones are produced. At full development the grains are large and the image becomes cool, almost black. If you leave a lith print in lith developer until the completion of development you simply get a cold toned, overexposed image. Removing the print from the developing solution at the snatch point, however, gives black shadow areas along with peachy pink or olive-yellow midtones and highlights.

Best results occur when using old (but not exhausted) developer. When mixing fresh developer, add to this used or exhausted lith developer (known as "old brown"), at a dilution of 1:4, to achieve the same effect.

Agitate constantly during development. Never be tempted to leave the print still in the solution as this will result in uneven development.

Developer will exhaust fairly quickly. Ignore the clock and watch the critical shadow area you want to control.

Image assessment is difficult because faint pink or sepia tones are being seen under red or amber safelights, but try to watch for the emergence of dark tones and, if possible, use a safelight torch. At the appropriate moment slide the print swiftly into the stop bath.

The strength of the developer greatly affects your image. Weakening the solution with water produces images of deeper pink tones which require longer development times, whereas strengthening the solution has the adverse effect. Weak developer will exhaust quickly, so be prepared for this and remember to save a little of the exhausted solution to add to the fresh batch.

Pepper fogging: Using weakened developer can result in 'pepper' fogging, an effect looking like black pepper has been sprinkled onto the sheet (noticeable in the highlights). The cure to this is to add sodium sulphite to the developer solution, either on its own or in combination with potassium bromide. The following dilutions can be used as a guide:

- 1 part of 10% sodium sulphite stock solution (100gm to 1Ltr water)
- 1 part of Developer A
- 1 part of Developer B
- 16 parts water (adjustable between 4 and 20 parts, depending on effect wanted)

If pepper fog is not completely eliminated by this process add 20% more sulphite solution and try again. Beware that if you add too much sulphite your prints will be flat in contrast with degraded maximum black.

Potassium bromide will also inhibit pepper fog formation, but not to the same extent. In addition to removing pepper fogging, potassium bromide will give the image a yellow-sepia tint, increase the contrast, provide solid blacks, and double the development time. One part of 10% potassium bromide solution should be added to the solution described above, using less sodium sulphite as desired.

Flashing (turning on the lights for a couple of seconds second during development) is useful to pull in faint highlights, but cannot be accurately assessed. This technique can be used towards the end of development to quickly assess the image before removing it from the developer solution. At this point the print it is unlikely that the print will stay in the developer long enough to fog, as light tones appear much more slowly than accelerating dark tones. Flashing can be experimented with earlier in development to produce differing results.

Contrast is controlled by development and exposure time. The shorter the exposure and longer the development, the higher the contrast and visa versa.

Dilution of the developer substantially alters the lith effect. As the developer decreases in strength, the pink tones achieved as a result will be greater. Conversely, as the developer strength increases, pink tones will be minimised and possibly eliminated.

Exposure

Burning in may be required in areas of minimum detail as these will develop much more slowly than the shadow areas.

Dodging will be necessary in any undesired shadow areas as infectious development will cause these deeper tones to stand out. Conversely, dodging is normally unnecessary in light areas, because infectious development leaves light shadows quite pale.

If scum marks appear on the print after fixing and washing, soak it in a 3% acetic acid and then rewash thoroughly.

Overexposure of two or more stops is essential. Judge either by using a reference print, or, more accurately, by using a test strip. The time intervals should be wider than those used for regular test strips, so if you normally proceed in f-stop increments, use 2 f-stop increments instead, and if you normally use steps of 10sec, try 30sec. In order to achieve the desired tones snatch from the developer as soon as shadow details reach the correct tone. Dry the print and verify that mid and light tones are as visible as desired. If they are not adequately developed, increase exposure by 50% or 100% and repeat the process. Expose the final print for mid or light tones, depending on which are most important to you.

Lith Printing: in Brief

It is important that you read all enclosed instructions carefully during your first few attempts at creating a Lith print. However, those who have developed an understanding of the process and prefer to refer to a concise, reduced set of instructions, the list below may be helpful.

- 1. Expose (overexposure is necessary)**
- 2. Develop using lith developer (Fotospeed LD20)**
- 3. Snatch from Developer at the correct point**
- 4. Stop - 20 secs**
- 5. Fix - 1+4 for 60secs**
- 6. Wash 30min**
- 7. Dry**

Processing Lith Film with LD20: Dilute A+B 1+3 with water and mix together to make the working solution. Process at 20°C for 5 minutes. Depending on the film used some adjustments to time may be necessary.