

Salt Printing with Fotospeed

Instructions

What exactly is a salt print?

In the early 1800's, William Henry Fox Talbot produced the first ever paper photograph, and the technique that he used is called salt printing. Although it is relatively easy to create a salt image, this method produces an effect very difficult to reproduce using modern photographic techniques. Talbot noted that slight variations in the proportions of the chemicals used led to a variety of tints and hues evident in the image. This, coupled with slight imperfections inevitable in silver nitrate coating, ensures that each salt print is unique.

A salt print is formed by a process of soaking cleansed paper in a salt solution, and then coating the sheet with a silver solution. The coated paper is then exposed and stabilized to create an 'aged' looking image with a unique charm.

Additional Items needed:

- An old board, sheet of glass, or table, on which to apply the solutions. The chemicals used will stain both wood and skin, so choose an unimportant surface and wear gloves.
- Cotton wool (synthetic is preferable)

Before you begin:

- *Bear in mind that the Silver Solution should be kept away from sunlight at all times and preferably be stored in darkness.*
- *Choosing your negative:* Your negative must be the full size of your intended salt print, and this oversized negative may be produced in one of two ways:
 - i) Scan your chosen negative into a computer using a negative scanner. Enlarge the *negative* image, and print at the desired size onto Fotospeed OHP film. If instead of scanning in a negative you have scanned in positive image, this must be changed into the negative form before printing. This is the quickest and simplest way of producing an oversized contact negative.
 - ii) Using an enlarger, expose the 35mm negative onto lith film at the desired size, and develop the film using *normal paper developer* for 1 min. Contact print this lith image onto another sheet of lith film, to produce its negative form, and develop this sheet, again using *normal paper developer*.

Producing a Salt Print

- 1) *Step one is optional, and is not required for the Canelleto paper contained within this kit.* Wash the paper in clean water to remove any impurities which remain from the manufacturing process. Depending on the paper used, it is also suggested that you resize your sheet using a gelatine bath (dilute).
- 2) Immerse your paper in diluted salt solution (1+29 with water) and soak for 2min. Next, remove the salted paper, blot, and allow to dry.

Under a red safe-light or in subdued tungsten lighting:

- 3) Place the dry sheet onto a flat surface, pinning down if desired. In order to keep your board or table a little cleaner, it is optional that you cover it with a clean sheet of blotting paper (to be discarded after each use).

Mixing your photosensitive solution – Take 30ml of the Silver solution (assuming an 8x10 print to be coated) and keep adding drops of Ammonia Solution, stirring continuously, until the solution turns black. At this point continue to *slowly* add drops of Ammonia to the solution until it clears. Stop adding ammonia *immediately* at this point. As soon as the solution has cleared it is ready for coating onto the salted paper. This prepared solution should be used within an hour of preparation and should be handled at all times in tungsten light and NOT in sunlight..

- 4) Coat one side of the salted paper using your preferred method. The buckle brush provided, a traditional coating method, is used as if it were a paintbrush. A more simple method of producing an even coating of the solution, however, is to make use of a large ball of synthetic cotton wool (this does

not break apart as the natural variety has a tendency to do). Dip the cotton wool into your prepared solution and wipe this across the entirety of the sheet of paper. Allow to dry and apply a second coat in the same way.

5) Leave the coating to dry THOROUGHLY.

6) Photogenic drawings or Images from negatives may be produced.

A photogenic drawing does not require the use of a camera or negative. It is the image created by an object placed directly onto photosensitive paper and exposed to a light source. Flowers, for example, may be printed in this way. A photogenic drawing of a flower will capture the delicacy and slight transparency of the petals as well as its thicker, more opaque leaf forms.

Salt printed images produced from negatives require the negative to be the exact size of the intended final image. Methods of transformation of 35mm negatives into this larger format are detailed above.

a) To make a photogenic drawing of an object such as a leaf or blossom, place this subject in contact with the sensitised side of the paper in either a printing frame or beneath a sheet of glass, then exposing the paper to the sun or a UV light for 10-20min. When sufficiently exposed the paper will have turned almost black, and it should immediately be removed from the light source.

b) To produce an image using a (large) negative, lie your paper flat sensitized-side up, and place your negative on top of this, emulsion (dull side) up. Lie your sheet of glass on top of the two, and expose as indicated above.

7) Wash the exposed paper in running water for 5min, or until no further silver solution can be seen to leave the sheet.

8) Immerse the paper in a strong salt solution (diluted 1+9) for 2min.

FIXING AND STABILISING

To protect your exposed paper from further effects of light, the sheet must be fixed or stabilised by chemical treatment. Stabilisers 1, 2, and 3 contained in this kit can be used alone or in any combination and their effects to the image are as follows:

Stabiliser	Highlights	Midtones and Shadows
1	Pinkish-purple	Dark Maroon
2	Primrose Yellow	Brown / Maroon
3	Pale Grey – Blue	Purple / Brown

9) Dilute your chosen stabiliser 1+2 with water and immerse your sheet in the solution for 2min.

10) Remove from stabiliser, rinse for 30sec, and leave to dry.

A stabilised image will undergo a series of changes over time; sometimes taking days, weeks, or even years before either darkening or fading according to a number of variables. Stabilised images will remain in an everchanging state, a condition described by Talbot as 'unstable equilibrium.'

11) An optional alternative to the use of a stabiliser is to apply a fixer to the print. A salt print may either be fixed in bath of diluted hypo or diluted FX20 for a period of 1min. Follow this fix time with a rinse in running water for 2min.

Although not associated with the traditional salt printing method, the use of a fixing bath will avoid the state of unstable equilibrium which the print would otherwise undergo. Fixing the salt image halts any changes which might have occurred over time to your image's colouring, yet it should be noted that the fixing bath will inspire a slight yet immediate colour-cast alteration.

You have now produced a Salt Print in exactly the same way as those first made by Talbot over 150 years ago!

Problems and Solutions:

Problem	Reason	Solution
<i>Image is light and hazy</i>	<ul style="list-style-type: none"> • Too much ammonia has been added to the silver nitrate solution. 	<ul style="list-style-type: none"> • The moment that the silver / ammonia solution clears, <i>stop adding ammonia immediately</i>
<i>Very light hazing areas are evident around certain areas of the subject</i>	<ul style="list-style-type: none"> • Subject is too 3-D and lumpy • Condensation has formed between your sheet of glass and the coated paper during exposure 	<ul style="list-style-type: none"> • Use a flatter subject, or flatten the chosen object beneath a sheet of glass • Ensure that paper is completely dry during exposure and that the subject is neither moist nor warm
<i>Brown (or other coloured) stains appear all around subject</i>	<ul style="list-style-type: none"> • Subject likely contains a chemical or acid which has produced a reaction with the coating solution 	<ul style="list-style-type: none"> • Place a sheet of glass between subject and paper
<i>Uneven Blotches are evident on dried print</i>	<ul style="list-style-type: none"> • Image has not been adequately rinsed • The paper's surface has been scratched or wiped whilst damp • Paper has not been rinsed after exposure and before stabilising 	<ul style="list-style-type: none"> • After stabilising, rinse paper well before drying • Take particular care of the image surface while wet (do not dry print upside down, for example) • Rinse print both before and after stabilising
<i>Thin White streaks across image</i>	<ul style="list-style-type: none"> • Wet ammonia / silver solution has been scratched 	<ul style="list-style-type: none"> • When applying silver / ammonia solution to paper make sure that gloves do not hang off hands and scrape through the liquid
<i>Very light Image</i>	<ul style="list-style-type: none"> • Inadequate exposure time • Image has been exposed onto the wrong side of the sheet 	<ul style="list-style-type: none"> • Increase Exposure time • Expose with paper facing the correct way up (as indicated above in instructions, no. 4)
<i>Drip stains on Image</i>	<ul style="list-style-type: none"> • Water or other chemicals have been dripped onto image 	<ul style="list-style-type: none"> • Keep paper in clean conditions whilst drying • Ensure that drying rack is not dirty
<i>Highlight Areas appear dull</i>	<ul style="list-style-type: none"> • Subject was not flat against paper during exposure • Stabilisers do not provide completely white whites; the expected highlights are indicated on the table provided. 	<ul style="list-style-type: none"> • Flatten subject beneath glass during exposure
<i>Blue flecks evident on final image</i>	<ul style="list-style-type: none"> • Paper was damp during exposure 	<ul style="list-style-type: none"> • Dry paper THOROUGHLY before exposing image
<i>Mildew-like stain on print</i>	<ul style="list-style-type: none"> • Contact negative has been damaged 	<ul style="list-style-type: none"> • Handle your negative with care. Verify that paper is completely dry, and ensure that negative emulsion is facing away from paper before beginning exposure.

Salt Printing: *in Brief*

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

1. *Optional* – Wash and resize paper
2. **Bathe paper in Salt Solution** – 2min, dilution 1+29
3. **Dry** thoroughly
4. **Coat the paper with silver/ammonia** solution
5. **Dry** thoroughly
6. **Expose** sheet
7. **Rinse** – 5min
8. **Soak in strong salt solution** – 2 min, dilution 1+9
9. **Soak in stabiliser solution**– 2min, dilution 1+2
10. **Rinse** – 30sec, running water
11. **Dry** thoroughly

History of Salt Printing

Salt printing is the first ever photographic process on paper, invented by William Henry Fox Talbot in 1839. During this time the idea of making ‘photographic’ images was not new, yet never before had anyone managed to make their images resistant to destruction from further light. After numerous experiments Talbot found a chemical substance which worked to preserve images. He managed to keep this chemical a secret for a number of months, yet later explained his findings to the Royal Society.

Talbot’s first successfully preserved photogenic drawings were held in a light-safe state by use of potassium iodide, a chemical which gives images a pale yellow tint in the highlights. He went on to explain that his usual method of preserving the image was to immerse the paper in a strong solution of common salt. Pictures treated in this way, dried and then exposed to direct sunlight quickly undergo a colour change: the white parts take on a pale lilac tint, after which they become insensitive to light. Talbot’s experiments showed that the depth of this lilac tint varies according to the quantity of salt used relative to the quantity of silver. The discoveries of Fox Talbot were the beginning of what we now know as photography.

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